

April 12, 2005

MEMORANDUM

UTAH DEPARTMENT OF TRANSPORTATION

TO: Jim McMinimee, P.E., Chairman

FROM: Barry Axelrod
Recorder, Standards Committee

SUBJECT: Standards Committee Meeting Minutes and Next Meeting

The next meeting has been scheduled for Thursday, April 28, 2005 at 8:00 a.m., in the main 1st floor conference room of the Rampton Complex.

Item	Remarks	Sponsor
1. Minutes of February 24, 2005	For approval	Barry Axelrod
2. Supplemental Specification 00555, Prosecution and Progress, Liquidated Damages Table	For approval	Pete Negus
3. Supplemental Specification 02827, Deer Ramp and Standard Drawings FG 4A, Deer Crossing Details and FG 4B, Deer Ramp Details	For approval	Michelle Page
4. Standard Drawings, AT 4, Typical Ramp Meter Signal Head Mounting and SL 12, Traffic Counting Loop Detector Details	For approval	Sam Sherman
5. Standards Committee Policy, UDOT 08A5-1	For approval	Barry Axelrod
6. Standards Sheet 1B and 1C	For approval	Barry Axelrod
7. Letter Of Instruction For Use Of Non-Standard 12.5 Foot Barrier	For approval	Jason Davis
8. AASHTO vs UDOT Standards	For discussion	Richard Miller
9. Standard Drawing SL 13, Video Detection Camera Mount	For approval	Tam Southwick
10. Review of Assignment/Action Log	For review	Jim McMinimee
11. Meeting Improvements (on-going agenda item)	For discussion	Jim McMinimee
12. Other Business		

JCM/ba
Attachments

cc:

Cory Pope Director, Region One	Stan Burns Engineering Services	Richard Miller Standards
Randy Park Director, Region Two	Todd Jensen Structures	Barry Axelrod Standards
Tracy Conti Director, Region Three	Darrell Giannonatti Construction	Patti Charles Standards
Dal Hawks Director, Region Four	Tim Biel Materials	Shana Lindsey Research
	Richard Clarke Maintenance	Carlos Machado and Todd Emery FHWA
	Robert Hull Traffic and Safety	Mont Wilson AGC
		Tyler Yorgason ACEC

February 24, 2005

A regular meeting of the Standards Committee convened at 8:00 am, Thursday, February 24, 2005, in the 1st floor conference room of the Rampton Complex.

Members Present:

Jim McMinimee	Project Development	Chairman
Richard Miller	Standards and Specifications	Secretary
Barry Axelrod	Standards and Specifications	Recorder
Stan Burns	Engineering Services	Member
Robert Hull	Safety	Member
Todd Jensen	Structures	Member
Darrell Giannonatti	Construction	Member
Richard Clarke	Maintenance	Member
Tim Biel	Materials	Member
Todd Emery	FHWA	Advisory Member
Mont Wilson	AGC	Advisory Member
Tyler Yorgason	ACEC	Advisory Member

Members Absent:

Randy Park	Region 2	Member
Carlos Machado	FHWA	Advisory Member

Staff:

Barry Axelrod	Standards and Specifications
Patti Charles	Standards and Specifications
Karl Verhaeren	Region 4 Construction
Steve Anderson	Value Engineering
Pete Negus	Construction
Glenn Schulte	Traffic and Safety
Denice Graham	Civil Rights
Boyd Wheeler	Structures
Shana Lindsey	Research
Michelle Page	Research
Richard Sharp	Research
Sam Sherman	TOC

Visitors:

Blake Hansen	TransCore
--------------	-----------

Standards Committee Meeting

Minutes of the February 24, 2005 meeting:

1. Minutes of October 21, 2004 meeting were approved as written.

Motion: Darrell Giannonatti made a motion to accept the minutes as written. Seconded by Tim Biel.

Todd Jensen commented about Supplemental Specification 02610 that was approved in the October 2004 meeting. Todd said since that time they have had more discussions with AGC and suppliers. As a result they are looking at 02610 again for changes and will bring those changes to the Committee for approval. Barry said that Michael Fazio has already stopped by the Standards Section to point out they were in the process of changing the specification.

Motion: Being no further discussion Jim called the question. Passed unanimously.

2. Standard Specification, Section 00555, Prosecution and Progress, Liquidated Damages Table (Agenda Item 2) - Presented by Pete Negus.

Pete said since the last meeting he has obtained project information for all of 2003 and 2004 and put the information together. He said he started looking at the CE costs. Pete said he is still gathering information.

Discussion points were:

- Jim asked for a brief explanation of what Pete is trying to do with the Liquidated Damages table. Pete said according to the CFR there is a requirement to update the information every two years. Pete said they are looking at CE costs for projects over the last two years that final payment has been made. Pete said his goal is to have something ready for the next meeting in April. Pete said he is meeting with Richard Miller to put this together.
- There was no further discussion.

3. Supplemental Specification 02843, Crash Cushions and Standard Drawings CC 1, Crash Cushion Markings: CC 7A, Grading and Installation Details Crash Cushion Type F Quad Trend 350; CC 8A, Grading and Installation Details Crash Cushion Type G; CC 8B, Grading and Installation Details For “3R” Projects Crash Cushion Type G; CC 9A, Grading and Installation Details Crash Cushion Type H; and CC 9B, Grading and Installation Details Crash Cushion Type H (Parabolic Flare) (Agenda Item 3) - Presented by Glenn Schulte.

Glenn said the change to 02843 is just about a complete rewrite. He said the original specification didn't cover everything that now needs to be covered. Galvanization was one key change. Glenn then discussed the biggest change. In article 2.1, B7 and 8 Glenn discussed the need to use the 12 ½ foot rail. Other changes are how the systems are marked and the pay items. Glenn said the pay item has been on the list the last year or so and has worked fine.

Glenn went on to discuss the change related to delineation and how Maintenance would like it handled. Glenn said he discussed this with Lynn Bernhard in Maintenance, indicating that Lynn wants to use a higher grade sheeting.

Discussion points were:

- Darrell asked Karl and Mont if they had any comments. Neither had any comments with respect to the pay items.
- Jim asked what is driving the use of a higher grade sheeting. Glenn said it is about an eight dollar additional cost. Glenn said the biggest thing driving that is visibility. The higher grade sheeting has a truer yellow color in the day time and can be seen better at night at low angles. He said FHWA and the older driver are leading the change. Glenn said he believes it is a National drive to go to the higher standards for the older driver.
- Bob commented on the sheeting issue and the visual aspects. He said the MUTCD recommends going to the higher levels.
- Jim asked if there was any research into the visibility issue. He said that intuition is used in making decisions. Are there any studies available? Bob said there are, adding that cost-benefit is hard to show. He said there is no way to generate that benefit. Bob asked because of increased visibility is there a benefit. Jim asked what are we paying for.
- In answer to a cost question Glenn said this applies only to new installations. Glenn said they are still trying to get a handle on how many applications are in use. When an application is hit, Maintenance would replace it with the new standard.

- Todd asked about the liability if MUTCD were not met. Bob and Glenn said we are meeting MUTCD. Bob said this is a recommended change by the MUTCD.
- Mont commented that based on approximately 5000 applications the cost would be around \$40,000. He asked over what time period would that cover. Glenn said there is no way to calculate that. Glenn said state wide we probably have less than 100 hits per year. Mont asked if a good guess is for approximately \$800 per year the increased visibility could be obtained. Glenn said that was reasonable. Glenn said there wouldn't be a wholesale change.
- Jim said his problem isn't with the dollar value, but is philosophical. He said you could do this with many items and standards that the Department deals with. He said you can nickel and dime yourself until you can't afford to do the things that you need to do because you have done a lot of these type of things. Jim said this group over the last few years has discussed a lot about standards being the minimum from the MUTCD. He said that if we exceed the MUTCD then we have evidence and information that it has a positive cost-benefit ratio. He said that is his reluctance. Glenn said he is aware of one study but it didn't show a cost-benefit ratio. Shana said there isn't a lot out there on this subject. She said there are studies related to older drivers, but those only show that older drivers want more safety. It's what they feel and want, but no cost information.
- Bob went on to say there is nothing that shows an economic benefit to being able to read a sign. Addressing Jim's comments, Bob said Jim was arguing from the point of not doing anything because you can't show the dollar figures. Jim said he is not saying lets not do anything, but lets get the standard that is already there. Bob asked without the dollar figure, when do we ever move beyond that. Jim said we can spend more money on signs, paint lines, and object markers for example but if we don't have benefits out of those expenditures and we don't have the money to build lanes then where are we. Jim said that is what the balance is here. Bob said he is aware of that. He asked that every item we do on a construction project then have that same view. Jim agreed. Jim said every standard passed by the Committee should have that same scrutiny. Bob asked if it does. Jim said our process is standardized so it should.
- Jim said if anyone in this group can point out anything that doesn't have a cost-benefit ratio that we are doing then lets not do it anymore. Jim emphasized, let's find those things that we are doing and stop doing those things.
- Glenn asked if the requirement on higher grade sheeting should be eliminated out of this specification.
- Michelle commented about a possible test section using the higher grade sheeting to compare to test data before the change. A crash data report could then be generated.

- Jim asked for the Committee's pleasure, commenting that someone needs to give Glenn direction. He then asked Glenn if he wanted to cover each of his items separately. Glenn said it didn't matter. Jim said to do the specification first.
- Shana asked if language could be used that allows the Maintenance Engineer to use higher standards. Jim said that ability already exists for a specific location.
- Jim asked if anyone had comments on the specification.
- Karl said he had some wording suggestions, but hadn't had time to get them to Glenn prior to the meeting. His first comment was on article 1.4 B1, suggesting different wording. He went on to say a lot of the language throughout the specification is a duplication and could be eliminated. He referred to the reference to the UDOT Guidelines for Crash Cushions for each of the types. He said it is already in 2.1 A1. Glenn said he could fix that.
- Todd commented about galvanizing being referenced for each section. Glenn said that was done that way for a specific reason based on comments related to specific projects. Glenn said he could move that to one area within the specification.
- Karl said the remainder of his comments was editorial in nature and not conceptual. He said the reference to CC Series Standard Drawings is repeated throughout the specification. Glenn said it was repeated so someone would know where to go for the information. Darrell asked Mont for his comments and if this made it easier for a Contractor.
- Todd commented about the last item in 3.1 about Force Account. He thought the reference should be removed. Karl said it might be a wording issue. With the specifications being written to the Contractor this item is telling the Contractor to make payment.
- Karl went on to say that the exceptions in 3.1 C could be combined into one item and not shown as two. He discussed the entire paragraph. Karl said he would get with Glenn on the wording of this paragraph.
- Referring to 3.1 A3, Karl said the "for" should be "of." He said we are trying to get approval of what the Contractor has done, not approval for doing it.

Motion: Darrell Giannonatti made a motion to approve Supplemental Specification 02843 as discussed and modified with respect to the sheeting and wording changes. Seconded by Todd Jensen. Passed unanimously.

The discussion continued with the drawings.

Glenn said the only change to CC 1 deals with sheeting just discussed. The drawing will revert back to the original so no change needs to be published for CC 1.

Glenn said CC 7A has been reworked and is a proprietary system. CC 7B was not ready in time for the meeting and will be brought to the Committee at the April meeting. On CC 7A Glenn said the biggest change was on the barrier detail and the requirement to have the shoe cut. He said the change eliminates a snag point with the detail seen in the circle view on the drawing.

Discussion points were:

- On CC 1, Karl commented about the note detailing the same drilling dimensions already shown on the detail. He didn't think the text was needed. Glenn thought the more information for the Contractor the better. Karl didn't necessarily agree. There didn't appear to be any direction to change the drawing.
- In response to a comment Glenn said the shoe cut seen on CC 7A should be done before installation. He said from what he has seen cutting after installation doesn't work very well. Glenn said their guidelines would be completed by the next meeting.

Glenn moved on to CC 8A. He said they addressed slope issues for this drawing. The problem was the required recovery area that was greater than the clear zone. The design and construction issues were addressed. Glenn said it is related to right of way issues. He said that has been addressed.

Moving on to CC 8B, Glenn said this drawing is for "3R" issues. He said note five would be cleaned up based on late information. Glenn read the new note. He said the slope requirements are different. Glenn said they are giving the designer the leeway to design a 2:1 or 3:1 slope instead of the 4:1 slope depending on the right of way.

Discussion points were:

- There was a question on the difference between the two drawings. Glenn said "3R" projects are very specific in its requirements. CC 8B is for "3R" projects only.

On CC 9A Glenn said this is also a proprietary system. He said the change deals with the recovery area and clear zones. He said it is a construction and right of way issue. There were no other changes to the drawing. He said there is no "3R" applicability for this type.

Discussion points were:

- Jim asked Darrell, Karl, and Mont if they were okay with the drawings. Jim asked if there were any bidding or enforcement issues.

- In response to a comment Glenn said the plan set would identify the system to be installed and that “3R” projects would be clearly identified in the plan set.
- Glenn said if the Resident Engineers have attended the Roadside Design Guide classes they should understand the installation basics and requirements. He added that under CC 8B only one type of system could be put in.
- Jim said based on initial comments that suggestions for improvement for the drawings came from meeting with Construction, Maintenance, and AGC. He added to keep that in mind as background.
- Karl asked if there would be any confusion in using CC 8B or tendency to use CC 8B for other than “3R” projects. Others voiced the same concern. Glenn said that could happen, but the designers should have already covered that issue. Karl said he struggled with this because the Standard Drawings apply to everything we do if applicable. Glenn said this is one of the times that you need a specific drawing for a specific plan set. Without a design exception he said there is no way you are going to obtain the proper right of way for the CC 8B design. Someone asked if a watermark could be put in the corner of the drawing identifying it for “3R” use only. Glenn said he could do that.

Motion: Darrell Giannonatti made a motion to approve Standard Drawings CC 7A, CC 8A, CC 8B, CC 9 A, and CC9 B as discussed and modified. Seconded by Tim Biel. Passed unanimously.

4. Standard Drawings BA 3A, Cast In Place Constant Slope Barrier and BA 3B, Precast Concrete Constant Slope Transition Section For Crash Cushion And W-Beam Guardrail (Agenda Item 4) - Presented by Glenn Schulte

Glenn said the changes are a direct result of comments from designers and construction on how to put constant slope barrier in. On BA 3A Glenn discussed trailing and approach end options and what designers can do. Glenn said he developed the drawing with the assistance of Boyd Wheeler and the Structures Group to eliminate the snag points.

Discussion points were:

- In response to a comment from Jim, Glenn said the MUTCD does not address constant slope barrier. Jim said his point is that there is no national standard and that UDOT is out there on their own. Glenn pointed out that several other states use constant slope barrier. This includes California and Washington State. Jim said no national standard is the point. Glenn agreed.
- Todd commented in reference to note 1 on BA 3A that the steel reference should be for reinforcing steel.

- Karl questioned the measurement and payment information on the submittal sheet. He said he wasn't sure what was being done. Glenn said "typical section" was being added to the pay item. Karl said he found it interesting that A, B, and C went 12, 14, and 10 feet respectively. Glenn explained why it was done that way. Karl said he didn't see it as that big a deal.

Glenn said BA 3B is a new drawing. He said the drawing addresses current situations. Referring to bridge parapets, he said we are too high. Glenn said he coordinated with FHWA and they didn't have a problem in the usage of this transition section. He said it could be put on the end of bridge parapets with no extra work. This solves the snag point problem.

Discussion points were:

- Tim said he had a question on BA 3A. He asked about the bar spacing in the Trailing End (C) Option 2 detail. He said the spacing was confusing. He wasn't sure if the number of bars was incorrect or the drawing was proportioned properly. Glenn said it might be the proportioning. Glenn will check it out.
- Glenn said the current specification covers this so no change to the specification was required.

Motion: Darrell Giannonatti made a motion to approve Standard Drawings BA 3A as discussed and modified and BA 3B as discussed. Seconded by Todd Jensen. Passed unanimously.

5. Pre-Cast Constant Slope Barrier Information (Agenda Item 5) - Presented by Glenn Schulte and Steve Anderson.

Glenn said he worked with Steve to put the information together. Steve said they have received a lot of requests from the regions to see a pre-cast constant slope barrier. Steve said the barriers are being used in several locations but have not been crash tested. Steve said that during a Value Engineering meeting the team member from Texas indicated they have a design that has been crash tested for 10 and 30-foot sections. The Texas barriers passed all NCHRP 350 tests. Any barrier between these lengths could be used. Steve said Texas adopted an "X" type connection that passed testing. Based on that Steve thought we could do the same thing and not have to go through testing.

Glenn commented about the connection point. He said he didn't know if our connection point would work. He said he thought the Texas connection would be a possibility. Glenn said Steve has been doing a lot of work on the issue but he isn't getting a lot of cooperation from our people to help document barrier hits. Steve said there is a method to grandfather our current barrier and connections, but you have to show the history and what happens during crashes.

Discussion points were:

- Jim asked if the barrier and connection are grandfathered could we then use our current design drawings as a standard. Both Glenn and Steve said there are no design drawings. Glenn said they are being used in Region One but he has never seen any drawings. Steve added that they wanted to get something to use in new installations and grandfather in those in use.
- Glenn said they haven't coordinated the new proposal with anyone. He said he wanted to know if he should go further and if another barrier type was wanted.
- Jim asked about the advantages and why we want to use single slope barrier as opposed to Jersey Barrier. Glenn said it is related to a higher test level, with Jersey Barrier being a level 4 when pinned. When not pinned it is a test level 3. He went on to explain the test levels used by NCHRP. Test level 1 is by speed and vehicle type. Test level 4 has a 21,000-pound vehicle with speeds of 45 and 55 mph. Test level 5 is a semi-truck at two different speeds and two different angles. Test level 6 is a tanker truck at two different speeds and two different angles. Glenn said FHWA requires level 3, but they are looking at going to a higher standard. Glenn said right now it is up to each region and the designer as what to use and where.
- Jim asked if we have this as a standard drawing does that encourage people to use this higher standard. Glenn said the agency has to define when and where the barrier would be used.
- Tim commented about his review of the maintenance on barrier. The issue of cast-in-place and pre-cast has grown with the use of cable barrier. How will FHWA look at it from a test level standpoint? Tim said we would have to define which sections of road are specific test levels.
- Jim asked Glenn for his recommendation saying that he brought this to the Committee. Glenn said don't do anything or allow it until a policy on usage is put together. Jim asked the Committee members if there was any further discussion.
- Glenn said there is a lot being used in Region One and some in Region Three. Glenn said as cast-in-place we can use it, but a usage policy is needed for pre-cast. Glenn added that there should be a usage policy for any barrier. Todd emphasized the connection is the issue, not the barrier itself. Glenn agreed. Todd said basically what we have done is to go to a taller section and used the same connection, assuming that it would work.
- Todd asked if we put this type of barrier out, does it always have to be cast-in-place. Do we want to take that tool away and not have it as an option?

- Jim said he was surprised by Glenn's recommendation. Jim said he thought Glenn would say the prudent thing is to continue development of the drawing. Glenn said frankly he thought we had too many systems out there. Glenn said that it is a maintenance nightmare. Glenn said he was trying to meet the request of the regions for a pre-cast constant slope barrier. Glenn said they get these requests all the time, adding that when he says no it doesn't seem to mean anything. Glenn said the region still goes out and builds it anyway.
- Glenn asked if Steve and he should continue.
- Tim said he struggles with the idea of putting something out that has not been approved.
- Glenn said some was placed before full adoption of the 350 testing.
- There was no further discussion and no action item.

6. Standard Drawings BA 4B, W-Beam Guardrail Transition and BA 4C, W-Beam Guardrail Transition Curb Sections (Agenda Item 6) – Presented by Glenn Schulte.

Glenn said these are just drawing updates with no impact on the specifications. Glenn said the changes on BA 4B are for adoption of 350 testing requirements. He said this drawing was adopted directly from the Minnesota drawing other than the rub rail. The rub rail was removed and the UDOT curb section added. Glenn said this transition meets 350 testing while our current one does not.

Moving on to BA 4C, Glenn said this drawing makes two different curb sections. He said one is for constant slope curb sections and the other for Jersey shaped curb sections.

Discussion points were:

- There was no discussion.

Motion: Darrell Giannonatti made a motion to approve Standard Drawings BA 4B and BA 4C as presented. Seconded by Tim Biel. Passed unanimously.

Glenn then referred to the bid items. He said the regions requested that bid items be broken out by wood and steel and length for each. This gives the region flexibility in choosing the system.

Discussion points were:

- Jim asked if anyone had any concerns.
- Jim asked if the motion needed to be amended. Barry said the motion could be amended. The motion was amended.

7. Standard Drawing DD 4, Geometric Design For Freeways (Roadway) (Agenda Item 7) – Presented by Todd Jensen.

Todd said the drawing was updated based on discussions at the last meeting. He said part of that was to come up with a standard for the median width. He said a note and area for maintenance were left off so that was researched and added. Todd said they are proposing putting the maintenance area back on the drawing. He said the 50-foot median width discussed last time has been included.

Discussion points were:

- Jim said he was confused about the fact there is no additional cost as noted in paragraph E of the submittal sheet. Todd said in reference to the approved drawing version there is a reference to clear zone. In that case barrier would be needed, making it more costly. Todd said in general an open median is safer. Todd said the proposed method gives us the opportunity to add more capacity without saying that is why the median area is there. He said the area is there for safety. If additional lanes were put in then barrier would be needed. He said by using the 50-foot minimum distance instead of the 64-foot distance it is easier to defend. This was brought up on the Legacy Project. He said it is prudent to have an open median, but with a 50-foot spacing purely from a safety standpoint. No discussion of future capacity is needed.
- Jim said if for example an HOV lane is added, you take 24 feet of that 50 feet so you would be back to having to put in the barrier in the 26-foot clear zone. Jim asked if they had looked at changing the 50 feet to 54 or 56 feet so you could eliminate the barrier. Todd said the 50 feet comes from the Roadside Design Guide. The 50 feet is the cutoff where you have to make a decision on whether you needed median barrier or not. Todd said that was why they chose the 50 feet. Barrier is optional at that distance based on research. He said regions could decide based on crossover accident data that they want to have barrier.
- In response to a question from Richard Clarke, Todd said this is for new roadway. Someone asked if it says that anywhere. Todd Emery asked if any other drawings covered this. Todd Emery referred to a current project where there is a conflict in slopes between the UDOT standard and note 1. A designer used the AASHTO policy as referenced in note 1 instead of the 6:1 slope on the drawing. Discussion continued on the slopes.
- Michelle said that in the 08-1 process the Roadway Elements are identified as the 12 critical design elements. She asked if identifying that in note one would clarify the issue.

- Jim asked if this was something we missed when converting to AASHTO Standards. Someone said it was 6:1 before. Todd Emery said there is some confusion. Todd Jensen said the 6:1 might have come about after Maintenance review in that the 6:1 slope is easier to maintain.
- Todd said he didn't think they even dealt with it on the Legacy Project. He said they did use the 4:1 where they didn't want to buy more right of way and it still met the AASHTO requirements. In response to a question Todd said it did not require a design exception.
- Michelle said another thing to keep in mind in medians where we are going with cable barrier if it is a borderline area with high crossovers is that you need a 6:1 lead in. Jim commented that it would be something like 6:1 desirable or AASHTO minimum. Todd said he would update the 6:1 annotations to be shown as desirable.
- Jim commented that the agenda shows the drawing for approval but the priority box on the submittal sheet was blank. After discussion a priority 3 was set.
- Mont asked how the Contractor would know where to put the maintenance area. Boyd Wheeler commented that the DD series drawings are for design and not included in projects. Todd said the stationing details would cover this. He said the designer uses the drawing to develop the typical sections.

Motion: Tim Biel made a motion to approve Standard Drawing DD 4 as discussed and modified with a priority 3. Seconded by Darrell Giannonatti. Passed unanimously.

Jim adjourned the meeting for a short break.

8. FHWA Coordination and Approval of Standards (Agenda Item 8) – Presented by Todd Emery.

Todd said he drafted a letter outlining the approval process with the FHWA proposed change. He said in the past a letter was sent to their office sometime after UDOT approved the specifications and drawings that requested FHWA approval. Todd said he didn't think that process made any sense. He said if they don't have to approve the changes for several weeks or more then no one is pressured to look at the changes before coming to this meeting. The changes might not get looked at until after UDOT approves the changes. He said it doesn't make sense for UDOT to approve the change and then FHWA not approve the change seeing how they are participating in the process. He said they are proposing to coordinate their review and approval of changes at the same time as UDOT. Todd said when they get the package they will review it and come to this meeting prepared to give their approval or with comments.

Todd said the letter specifies how we use to do the process and the recommended change. He said UDOT would just have to respond to the letter, agreeing to the change. He said he looked through the stewardship agreement and doesn't see any reason to change that agreement. Todd said he didn't know if UDOT had to change their policy and procedures.

Discussion points were:

- Barry said the Standards Committee policy would have to change and that he would take care of it.
- Todd said we could start now with the new process but for formal purposes the change would be effective with the signing and return of the letter.
- Todd said he would distribute items from each agenda to the appropriate people in the FHWA Division Office. They would be told they have two weeks to look at the item and comment or lose their chance.
- There was no additional discussion or questions.

Action Item: Barry to update the Standards Committee policy to reflect the change in the FHWA approval procedure.

9. Supplemental Specification 02826, Deer Ramp and Standard Drawings FG 4A and FG 4B, Deer Ramps (Agenda Item 9) – Presented by Michelle Page.

Michelle said there has not been a deer ramp standard in the past and the regions have been asking for one. She said part of the drawing came from Wyoming. Michelle indicated they have been working with Utah State University (USU) who was awarded a national study to look into the effectiveness of deer ramps. Their comments have been incorporated. She indicated Region Four has done a lot of work with deer ramps. She asked for comments on the recommended drawings and specification.

Discussion points were:

- Boyd commenting about the distance from the edge of road to the right of way asked if there is sufficient room. Michelle said the intent was to identify locations in the planning phase if there was a migratory area with a lot of hits. In this case you could put this facility in. She said right of way would have to be purchased but it would reduce hits significantly. Michelle said the original proposal was to have the ramps everywhere but the team said that couldn't be done. She said the cost is \$6,000 to \$7,000 for each one. As a result they set up the drawings with a high migratory ramp and a regular ramp.

- Jim asked Michelle to explain how the decision is made to select a ramp. Michelle said they are working on putting a guideline together. The guide would indicate what to look for in each phase of the project. The guide would also indicate what works in Utah and what doesn't work. She said the guide would help designers and planners. She said they are trying to better define the process.
- Jim asked if she know what the criteria would be. Michelle said they looked at a research study done by the University of Utah on hot spots. She said she reviewed crash data and ran a new hot spot analysis. She said she got almost the same routes, with a few changes where Maintenance and Construction had gone in and put in fencing and other things in.
- Following up on the question from Boyd and Michelle's answer Jim asked how do you make the differentiation between the \$2,000 regular ramp and \$7,000 high migratory ramp. Michelle said it was a two-fold question. She said the region wildlife manager would indicate where the crossings are to be located. The second part deals with our crash data and where the hits are. She said the high migratory crossing is where the highest number of hits is found. Outside of that we would use the typical deer ramp. The spacing depends on the migratory routes. She said the Division of Wildlife Resources has been more than willing to help.
- Darrell asked about the reduction in accident rates after the ramps have been installed. Michelle said the last numbers showed a 90 percent reduction in most areas with as low as 70 percent in others. She said she has seen some research data that shows the accidents are pushed to the end of the fences so that is something that would have to be watched. She said they would have to work with the Wildlife Habitat Managers.
- Michelle said they needed to put something together and get a working point they could get out instead of everyone making up something new every time.
- Michelle said they are asking for comments and suggestions. Jim asked if she was asking for approval of the specification and drawings. Michelle indicated she was.
- Commenting on the current deer gates Richard Clarke said most have been wired shut by Maintenance because the gates didn't work. Michelle said the USU efficiency studies on those were only 12 percent. There were some that had only a two and three percent usage. Michelle said they had to find something to replace those gates with. She then discussed the Wildcat Interchange study findings.
- Discussion continued on the size of the wood posts. Payment as each was then discussed. Michelle said there would be two separate pay items, a regular and a high migratory. She said the same specification would apply.

- Commenting on the drawings Tim said he didn't think there was enough information to construct the ramps. Michelle said she didn't want to add another sheet so she tried to consolidate space. She said if you draw a line down the center of the page for FG 4B, the left side is for the high migratory area and the right side for the typical. She said they could enlarge the typical and put it on its own page. Tim said the title on both drawings is the same for two different things. He said on FG 4A there are two different tags for the same thing on the three ramps. Tim didn't think there was anything wrong of the details, just the callout names. Michelle asked if the confusion would be eliminated if they were all called deer escape ramps. Boyd suggested including "High Migratory" in the title of the FG 4A drawing.
- Tim commented on the wording of the note below the isometric view on FG 4B. He said there is nothing that shows where the drift fence goes. Michelle said on the typical there is a drift fence, but not on the high migratory one. Michelle said she would remove the note from the high migratory portion of the drawing. Tim said the wording just needed to be worked out. Michelle said having another sheet might help with some of the confusion.
- Boyd said the 3 foot 10-inch embedment part of the post needed to line up properly.
- Comments indicated that a "High Migratory" section needed to be added to the specification.
- Karl commented about the payment of topsoil, seed, and mulch. He thought it should be included instead of paying by the acre. Michelle said she would take the "required" off the detail and work out the wording.
- Jim said that based on the amount of discussion he thought this item should come back next time. Michelle concurred.
- Referring to the timber in the specification Karl asked if the timber was all treated. He said that needed to be called out. Michelle said she would check out the standard.
- Karl said he thought the reference to applying water in 3.1 I could be dropped. Barry said if this paragraph is removed then the reference in 1.2 A should be removed.
- Boyd suggested making the 7-inch diameter callout for the strut clearer. Michelle said she would have to check into the dimension.
- Jim thanked Michelle for her efforts.

Action Item: Michelle to update the specification and drawings as discussed.

10. Supplemental Specification 01284, Prompt Payment (Agenda Item 10) – Presented by Denice Graham.

Denice said she formed a committee to look into clarifying and updating the Prompt Payment special provision being used and to make it a standard. She said she worked with the AGC in making the changes. She mentioned the groups she worked with.

She said the biggest change is if the Contractor doesn't pay subcontractors within 10 days they would be assessed liquidated damages of \$250 per incident for every day they haven't paid the subcontractor. She said they would have three days to correct the situation before being assessed the liquidated damages. Denice said on the other side if Contractors pay their subs timely and no complaints are received Civil Rights thought it was beneficial that the Contractor should earn the \$250 for every subcontractor on the project. She said they spend a lot of time in the regions and in the Civil Rights office investigating complaints. She said they wanted to tighten up the situation because in the past withholding payment just meant the Contractor wouldn't pay the subcontractors.

Denice said they also wanted to get the payment requirement for suppliers in line with Federal requirements so the number of days was changed from 25 to 30.

Discussion points were:

- Jim commented about the extent of work with the AGC.
- Mont commented with respect to oil and the 30-day payment requirement. Mont said the problem comes up with the Department's oil acceptance testing unless the Department can ensure the testing is completed within 30 days. Denice said she couldn't guaranty that. Tim said he couldn't guaranty that either.
- Denice said they addressed the supplier issue because of problems. Her team said the 10-day requirement couldn't be met. She added that some supplies complained about not getting paid for 60 to 90 days even though the Contractor has been paid.
- Jim commented about the 30-day requirement being a Federal requirement. Todd Emery said that was not negotiable. Jim said he was going to ask if we could go to 45 days to minimize the number of exceptions. In response to a question from Boyd, Denice said it is 30 days from acceptance. Denice said the subs have to be paid within 30 days of the Contractor being paid. Tim asked if the binder (oil) issue was the only problem. He said if it were, could an exception be written.

- Karl asked if it is ever an issue between the Contractor and supplier when we have bad samples. Tim said they don't get into that. He said they assess the Contractor the penalty. Karl said that is his point, so why do we care whether the Contractor has paid the supplier or not. Karl said he understands there is a dilemma here but you are almost making the assumption the binder supplier is supplying bad material.
- Denice said this change has not been put out for use as a special provision, but it has been presented in all their training with the regions. She said they have also proposed it for training with Contractors. Denice said so far they have not received any negative comments.
- Karl said one problem could be the last statement in the specification dealing with the payment entitlement. The item states "Payment within 30 days after project is finalized." Karl said when a job is finalized the Contractor is paid, to include the incentive. How do you pay this after the project is finalized? Tim suggested "substantial completion." Karl said the wording should be something other than finalized. Karl said it is a terminology issue. Karl said it is too late if you have already finalized and paid the contract and then discover a problem.
- Karl suggested the sentence indicate, "contract completion." Denice said they were proposing the Contractor wouldn't get their incentive until 30 days after they had been paid for everything. She said it would be an "extra."
- Darrell asked about what we wanted to do about asphalt. Someone said that couldn't be resolved during this meeting.
- The discussion then moved back to the "finalized" issue. Karl said some subcontractors might be working right up until the last day of work on the project and their payment may not come about until the final payment.
- Referring to the requirements of 1.3 C with respect to requiring written notification from the subcontractor, Mont said that isn't going to happen. He said the subcontractor might not know they are complete. Denice said this applies to all the identified items in their subcontract. She said the regulation says the subcontractor should notify the Engineer or the Prime in writing that they have completed all their items. She said this is for the protection of the Prime so the subcontractor can't say they have been done for 60 days but have not been paid. Denice said initially they would think the Prime had neglected to promptly pay the subcontractor but the investigation showed that the sub had not notified the Prime that they were complete. Denice said this was something the AGC people on her committee requested. Denice added that they are covering this during their training. She said this might not be perfect but it is better than what we have now.

- Denice said she tried to address all loopholes they have seen and all complaints they have received in putting this specification together.

Motion: Darrell Giannonatti made a motion to approve Supplemental Specification 01284 as discussed and modified to include the wording for “completion” in the last paragraph of the specification. Seconded by Tim Biel. Passed unanimously.

- Jim and Darrell thanked Denice for her efforts. Darrell said it has been a long road.
- Barry asked Denice if the Prompt Payment portion of the Table of Contents comes out with this approval. Denice said yes.

11. Standard Drawings, AT Series and SL 12, Traffic Counting Loop Detector Details (Agenda Item 11) – Presented by Sam Sherman.

Sam said their update started last summer with the review by Construction, Maintenance, and the AGC. He said they realized they had a lot of issues that needed to be resolved based on comments from those review meetings. He said they tried to clean up the overall approach to the subject.

Referring to AT 1 Sam said they simplified the ATMS line styles. He said they added around 18 new items in the equipment legend. He said they also came up with an Electrical Schematic Legend. He indicated they intend to submit them to the CADD library.

Discussion points were:

- Jim commented about the way Sam included the log in the submittal sheet. He said the log was very helpful. Jim said that theoretically the Committee should have had time to review the log. He asked those present if anyone had not reviewed the log and drawings.
- Todd Emery indicated he had several comments on the drawings based on their review. On AT 2 he said the two R10 signs should be swapped so the left sign was on the left. The existing headers on the signs would then be correct. His next comment was to remove the 8-foot dimension in the lower right detail. He said the minimum height is controlled by the height of the lower sign. His next comment for AT 2 was to add a horizontal dimension line from the pole to the first signal head for edge of traveled way. He said it should identify the line with the word “offset,” refer to note 6, and add note 6. He provided Sam with the wording of the note.
- On AT 3, Todd said to change the title of the AT 3 D detail from W3-3 (Modified) to WS-3. Todd said the comments are from other people in the FHWA office.

- Referring to AT 4 Barry said the note section lists several items as not used with other items added. He asked if the numbers could be redone so that there were no “not used” items. Sam said he hadn’t caught that. Sam added that there are several other issues with this drawing. He said the items couldn’t be build the way it is designed and he would like to resubmit the drawing for approval at the next meeting. There was consensus to bring the drawing back.
- Todd then covered his comments to AT 5. He said to add vertical lines for the ramp meter offset to details B and C. He said to also add a ramp meter mast arm assembly to the shoulder line; label offset, refer to note 5, and add note 5.
- Barry said to rewrite notes 3 and 4 on AT 5 in active voice. Barry said he had all the drawings marked up but Sam was unable to meet prior to the meeting. Barry said he would give Sam the changes after the meeting and that the changes wouldn’t impact approval. Barry said the same applies to AT 6. He also said the numbering format should be fixed. It should be a 1 and 2 with a period, not a number in a circle. A typo was also pointed out in note 2. “Grated” should be “graded.” Sam said they cleaned up their conduit layout, making it better.
- On AT 7, Sam said they are requiring a concrete collar around the boxes. He said they added the concrete callout to make it consistent with other drawings. Jim asked if the boxes were pre-fabricated and commercially available. Sam said yes. Sam said that previously they had three load ratings on the drawing but eliminated load rating 3. He said if the load rating 3 box was driven over it broke up. In addition there was no significant cost difference between the number 2 and 3. Sam then discussed the box types. Barry said note one needed to be changed to active voice. Barry said the text after the section number in note 1 is not used any longer when referring to specifications. He said all references are just to a specification number, with no article or paragraph reference. He said that applies to that type of reference whether in a specification or drawing. Barry said Mont agreed to that type of change several months ago.
- In reference to all the drawings Barry said hyphens are not used in drawing number call outs. In AT 7 note 3, the “AT-8” would be “AT 8.” The proper format is the two-letter designation followed by a space and then the number.
- Jim asked Barry if he had more similar comments on the remaining drawings. Jim said if not, if Sam has done everything in the log, and if everyone has had time to look at the drawings was there any further comments.
- Boyd commented that the #13 ties on AT 12 should be #4s. The 13’s were metric.
- Barry said he would get with Sam on the remaining wording items.
- On AT 18 Sam said he would switch the two details so the lane directions are on the correct side.

- Sam said he put a priority 2 on the submittal sheet but is willing to change it to priority 3 as long as the changes are published within two weeks. Barry said their goal is 10 working days so if everyone gets their changes in on time the change should be out on time.

Motion: Robert Hull made a motion to approve Standard Drawings AT 1 – 12 and AT 14 – 18 except AT 4 as discussed and modified and to delete AT 13. Seconded by Darrell Giannonatti. Passed unanimously.

- Jim thanked Sam for the good job in updating these drawings.

Action Item: Sam to update AT 4 per the discussion that the current details are not constructible.

- Bob pointed out the SL 12 was on the list of drawings. Jim asked if anyone had any comments on SL 12.
- Sam said table 1 was added, as was a dimension in the top left of the drawing. He said they have found there are differences in the way the loop spacing is done. He discussed the differences between the traffic counting and traffic monitor loops. He said the ATMS requirements are different from the requirements of Gary Kuhl's group in Planning.
- Todd Jensen asked about the phone number reference in note 1. Sam said that is Mark Fry's group. Jim asked about the purpose of that call from a Contractors standpoint. Sam could only make an assumption about the reason for the call. Barry asked why the call wasn't to the Engineer like in all other contacts. Again only assumptions could be made as to the information database on traffic counts. Barry said if it isn't a construction type issue then the wording might be fine.
- Jim asked if this drawing was one of the drawings that needed to go out in the ATMS project that Sam was concerned about with respect to the priority and publishing time for the AT drawings. Sam said no. Jim asked if it could come back with the AT 4 drawing at the next meeting. Sam said yes. Everyone concurred.

Action Item: Sam to get answer to contact question with respect to SL 12 and bring the drawing to the next meeting.

12. UDOT Consideration of Open Range Cattle (Agenda Item 12) – Presented by Robert Hull.

Bob noted that the reference to “cows” should be “cattle.” He said he didn’t have a lot of detail on this item. Bob said there have been discussions about developing a policy specific to open range signage. Bob said the Traffic Engineering Panel (TEP) recommended that UDOT policy 08A-10, Construction and Maintenance of Right-Of-Way Fence be updated to include this issue. Language dealing with open range signage would be added. Procedures or a guideline would then be developed that talks about dealing with how much should be signed, the number of signs, and the distance between signs and a review procedure.

Discussion points were:

- Jim said he couldn’t remember a lot of the detail from the e-mail that got this item started but there was something from one of the attorney generals about the legality of the issues surrounding a standard. Jim asked Bob if he could clarify that. Bob read from the e-mail. The statement read: “The purpose of this evaluation is both to develop a standard and to create a record that we have gone through an official evaluation. The AG’s office believes that this evaluation and documenting the process would strengthen our defense.”
- Richard Clarke asked if we are going to set a standard or write a policy. Bob said it would be a little of both mainly because right now all that is in the MUTCD is the open range sign. It doesn’t talk about the frequency of the signing or that sort of thing. Bob said that would be us doing that for a standard. Bob said according to the Attorney General (AG) because we don’t address it we might be opening ourselves up to liability issues.
- Jim asked Bob if over the next several months he would be bringing information back to the Standards Committee. Bob said he thought so. Bob said the question is should it be included as a procedure in the policy or as a guideline. Jim asked Bob if he felt comfortable making a recommendation to the Committee at this time. Bob said he was leaning toward a guideline and Jim said he was okay with that.

Action Item: Bob to develop the information and bring it to the Committee for the June 2005 meeting.

13. Review of Assignment/Action Log (Agenda Item 13)

Jim reviewed the action log.

Comments beyond those identified in the agenda package, Action Item Update follow:

- Bob said they are on track for item 1 and have a meeting set up.
- For item 3, painted cattle guard, Bob said this related to the policy he discussed earlier. Bob said because they couldn't find supporting research the Traffic Engineering Panel recommends replacement in kind. Shana asked if anything was discussed about using black paint under the white paint. She said when the black paint fades out the effectiveness is lost.
- On item 6, Traffic Barriers, Tim said he discussed it earlier in the meeting under another agenda item. He said if the target date were set to April it would force him to do something sooner.
- For item 7, Walkway Issues, Boyd recapped what he had stated in the summary. Jim commented that the drawings would be working drawings and not standards, asking if that were correct. Boyd said it was. Item close.
- For item 8, Shana said meetings have been set up. Jim asked if the April target date could be met. Shana thought June would be a better target.
- The remaining items were completed during the regular part of the meeting.
- The status report as handed out at the meeting follows:

Action Item Update for February 24, 2005 Standards Committee Meeting

(As of February 9, 2005)

Item 1, Rumble Strips: The item is still being reviewed. Target date changed to April 2005.

Item 2, Prompt Payment: Being covered on the agenda. Item up for approval.

Item 3, Painted Cattle Guard: Information provided by John Leonard. John indicated that because of other work priorities there is no further update on this item. He suggested the target date be moved to April 2005.

Item 4, New Drawing of Four-Legged Intersection: Information provided by John Leonard. John indicated that because of other work priorities there is no further update on this item. He suggested the target date be moved to April 2005.

Item 5, Deer Ramps: Being covered on the agenda. Item up for approval.

Item 6 Traffic Barriers: According to Tim Biel this item has been complicated by the use of cable barrier. Further input and target date depends on his work schedule. Target date should be changed to “open.”

Item 7, Review e-mail, coordinate with Risk Management, and make proposal on Walkway issue: Information provided by Boyd Wheeler. Boyd reported that he met with Reine Ruf in Risk Management and with a Consultant currently doing a design on some VMS signs for the Department. They discussed Reine’s concerns regarding the particular aspects of the walkways provided to access the VMS signs and have agreed to make some needed changes. Those changes have been made by Sunrise for their project and have been sent in draft form to the Structures Division. Structures will implement the changes as they are finalized in their Structural Standard Working Drawings for implementation in future projects. Boyd recommends this item be closed.

Item 8, QIT with Jim McMinimee and Dave Miles to review entire New Products procedure: Item assigned to Research Division. Information provided by Michelle Page. A QIT has been formed to look at the item. Meeting over the next several months have been scheduled. No target date set.

Item 9, Section 00555, Prosecution and Progress, Liquidated Damages Table. Complete additional review and statistical analysis of Liquidated Damages table. Pete Negus indicated the item is not ready for approval. More discussion is need. Item on the current agenda for discussion only. Target date to be moved to April 2005 meeting.

Item 10, Section 02843, Crash Cushions: Being covered on the agenda along with associated CC Series Standard Drawings. Item up for approval.

Item 11, Standards for Median Widths in Urban Areas: Standard Drawing DD 04 with additional changes being covered on the agenda. Item up for approval.

Item 12, FHWA Coordination and Approval of Standards: Todd Emery indicated FHWA has approved the change in procedure. Being covered on the agenda. Item to be discussed by the Standards Committee.

14. Meeting Improvements (on-going agenda item) (Agenda Item 14).

Jim said something that came to light during the meeting and the break was that while the current submittal sheet covers costs, there is nothing addressing the benefits of a particular change. He asked if the sheet should be modified so that the Committee can cover the cost-benefit questions. The Committee agreed that the submittal sheet should be updated. Barry said this is part of the Standards Committee policy that he has to update for the change in FHWA approval procedures. Barry said he would cover it as one action item for him for next time.

Tim asked if he could add something. He discussed the need to consider the Minimum Sampling and Testing Guide when proposing changes to specifications and drawings. Barry said he was going to bring up the same thing under other business based on a request from Tim Rose in conjunction with the Standards Section's upcoming region visits. Barry said he would add something to the submittal sheet to cover this.

Shana commented on her attendance at the meeting from a Research Division standpoint. She said they are available to assist with research into what other states are doing in a particular area or any information that would be a benefit. Jim said many times we ask if there are national studies on a particular item. Jim said Shana's involvement in the Committee is very important. Jim said whatever she could do before the item is brought to the Committee would be important.

In response to a question Barry reviewed the meeting dates for the remainder of the year.

- April 28
- June 30
- August 25
- October 27
- December 15

Barry said the schedule is on the Standards Committee Web site as are the suspense dates.

There was a question on the use of legislative format for changes to specifications. Tim said it was hard following some of the specifications reviewed during the meeting. Barry said in the case of a new specification like the Prompt Payment supplemental it was a new section so there was nothing to highlight. Barry said they usually try to highlight the changes but that is not always possible. In response to a comment from Jim, Barry said this has always been a part of the policy. Barry said the Crash Cushion supplemental was rewritten quite a bit. Barry agreed that this is something those submitting changes to the specifications need to accomplish. Depending on the extent of the change, MS Word may show everything as a change so the individual proposing the change would have to mark up the document line by line.

15. Other Business:

6:1 Slope – Todd Jensen said Tyler and he looked at the AASHTO Green Book on this item that was discussed earlier. He said the 6:1 slope does meet AASHTO requirements. Tyler said it is mentioned in AASHTO specifically for freeways and is recommended. He said chapter 4 does cover 4:1 as a minimum. DD 4 is specifically for freeways, not other highways. Todd said we could still put "desirable" on the drawing. Todd Emery asked about the other drawing that dealt with other roadways. Todd Jensen couldn't remember the numbers. Barry gave Todd Emery as copy of the applicable drawings from his book. Discussion continued on various drawings and options. A specific project was also discussed.

Fuel Costs and Binders – Tim Biel brought up this item. He discussed the issues related to the Contractor and subcontractors. He said it is more of a philosophical issue. Tim didn't think it was his place to tell how the adjustment would be paid to the supplier. If the money is just going back to the Contractor why are we paying the adjustment in the first place? Discussion continued on prompt payment issues. Jim asked if there was a proposed alternative. Tim said the proposal come from someone else. The proposal was to modify the program so that we pass it through to the supplier. Tim said he didn't think we could do that even if we wanted to. Tim said the philosophical issue for him was is he doing the right thing by saying he doesn't get into business decisions. Darrell said if you think about it, it is the prime who escalates it. Tim said it is not the specific issue but is the underlying issue that he wants to make sure of when he says it we don't get into arguments between the Contractor and the supplier. Jim asked if there were any other comments. There were none.

Barry asked about the submittal sheet changes. He said the changes would be part of the policy that will be presented at the next meeting. Should the submittal changes be implemented in time for the next meeting? Jim said yes. Barry said he would get the submittal sheet changes out as quickly as possible.

Adjourned.

The next regular meeting of the Standards Committee has been scheduled for Thursday, April 28, 2005, at 8:00 a.m., in the 1st floor conference room of the Rampton Complex.

Approval of Minutes: The foregoing minutes were approved at a meeting of the Standards Committee held _____, 2005.

Assignment/Action Item Log (Updated March 31, 2005 following the meeting)

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
June 27, 2002 October 31, 2002 December 19, 2002 February 27, 2003 April 24, 2003 June 26, 2003 August 28, 2003 October 30, 2003 December 18, 2003 February 26, 2004 April 29, 2004 June 24, 2004 August 26, 2004 October 21, 2004 February 24, 2005	1	Standard Drawing PV 8 (Rumble Strip) Process being reviewed. Research looking into testing. A policy is to be developed over the next several months. No change No further updates. Target date changed. Progress continuing. To work with Research. Process continuing. Still being worked. No update Jim to follow up with Research. Research has study with University of Utah Research study complete. Policy being written. Waiting for BYU study results. Still being reviewed. Target changed.	Darrell to assign someone from Construction. Richard Miller from Maintenance. Fred Doehring. Betty Purdie. Robert Hull to head the group. Robert Hull Stan Burns Robert Hull Stan Burns	Open	April 2005 meeting

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
December 19, 2003	2	- Painted Cattle Guard: With assistance from Research Division, Traffic and Safety to make recommendation.	Glenn Schulte John Leonard	Open	April 2005 meeting
February 27, 2003		- No status.			
April 24, 2003		- Traffic Engineering Panel to review			
June 26, 2003		- No change. Not due until August.			
August 28, 2003		- No change.			
October 30, 2003		- Traffic and Safety and Research to work together to determine history and usage requirements.	Bob Hull Stan Burns		
December 18, 2003		- No change in target date.			
February 26, 2004		- Not on agenda.			
April 29, 2004		- Still gathering information			
June 24, 2004		- No report. E-mail sent to SAF and RES.			
August 26, 2004		- Cattle Guard – Put team together to look into information related to cattle guard type and make a recommendation to include a usage policy and related standard specifications and drawings.	John Leonard		
October 21, 2004		- No change.			
February 24, 2005		- No change. Work priorities prevented further review.			

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
August 28, 2003	3	A new drawing depicting the four-legged intersection to be developed.	John Leonard	Open	April 2005 meeting
October 30, 2003		No change in status.			
December 18, 2003		Target date set.			
February 26, 2004		No change.			
April 29, 2004		Being developed			
June 24, 2004		No report. Not due until August. E-mail sent to SAF and RES.			
August 26, 2004		No change except target date.			
October 21, 2004		Still under development. Target date moved.			
February 24, 2005		No change. Work priorities prevented further review.			

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
February 26, 2004	4	Research in conjunction with Environmental to put together a proposal/drawing for deer ramps.	Blaine Leonard Barry Sharpe	Open	April 2005 meeting
April 29, 2004		No new information reported.			
June 24, 2004		No report. No target date. E-mail sent to SAF and RES.			
August 26, 2004		No new information			
October 21, 2004		Meeting set up with Dept of Wildlife Resources. No target date.			
February 24, 2005		Presented at February meeting. Open items. Supplemental Specification 02826, Deer Ramp and Standard Drawings FG 4A and FG 4B, Deer Ramps: Specification to be updated to include "High Migratory" information. Drawings to be clarified to include possibly adding a third drawing so "High Migratory" and typical are separate.	Michelle Page		

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
April 29, 2004	5	Traffic Barriers: Task group to gather information and make a recommendation for a barrier type.	Jason Davis	Open	April 2005 meeting
June 24, 2004		Review still in progress.	Tim Biel		
August 26, 2004		No change			
October 21, 2004		No change			
February 24, 2005		No change. Work priorities prevented further review. Cable barrier complicating issue.			
August 26, 2004	6	Form a QIT with Jim McMinimee and Dave Miles to review the entire New Products procedure.	Stan Burns	Open	June 2005 meeting
October 21, 2004		Still being worked.			
February 24, 2005		Meeting have been schedules	Shana Lindsey Michelle Page		
October 21, 2004	7	Section 00555, Prosecution and Progress, Liquidated Damages Table. Complete additional review and statistical analysis of Liquidated Damages table.	Pete Negus	Open	April 2005 meeting
February 24, 2005		Finalizing			

Date Initiated/Updated	Item #	Action	Assignments	Status	Target Date
February 24, 2005	8	Standards Committee policy to be updated to reflect the change in the FHWA approval procedure and desired changes to the submittal sheet dealing with cost-benefit analysis and the Minimum Sampling and Testing Guide. Change to submittal sheet published to the Web on March 1, 2005.	Barry Axelrod	Open	April 2005 meeting
February 24, 2005	9	AT 4, Typical Ramp Meter Signal Head Mounting: Drawing to be updated per the discussion that the current details are not constructible. "Not Used" references to be removed.	Sam Sherman	Open	April 2005 meeting
February 24, 2005	10	SL 12, Traffic Counting Loop Detector Details: Answer contact question for note 1.	Sam Sherman	Open	April 2005 meeting
February 24, 2005	11	Open Range Cattle Issues: Develop relevant information and guidelines.	Robert Hull	Open	June 2005 meeting

Closed Items From Last Meeting (February 24, 2005)					
Date Initiated/Updated	Prior Item #	Action	Assignments	Status	Target Date
December 19, 2002 February 27, 2003 April 24, 2003 June 26, 2003 August 28, 2003 October 30, 2003 December 18, 2003 February 26, 2004 April 29, 2004 June 24, 2004 August 26, 2004 October 21, 2004 February 24, 2005	2	01284 (Prompt Payment) discussion delayed for further review by AGC. Being reviewed by Construction. No change. Not due until August. Discussing with AGC. Updating with new Civil Rights Manager Discussions with AGC continue. Dropped from December 2003 meeting. Not on agenda. Something should be ready for next meeting. Delay with AGC coordination. Still working. No change Specification draft out for review. Item approved. Closed.	Chuck Larson Darrell Giannonatti Denice Graham	Closed	Closed
June 24 2004 August 26, 2004 October 21, 2004 February 24, 2005	7	Review e-mail, coordinate with Risk Management, and make proposal on Walkway issue. Dave Nazare to update Todd Jensen Still being worked. Following discussion no further action required at Standards Committee level. Recommend closing	Boyd Wheeler Todd Jensen	Closed	Closed
October 21, 2004 February 24, 2005	10	Section 02843, Crash Cushions. Update Section to include completing coordination process on the submittal sheet. Item approved with associated Standard Drawings. Closed.	Glenn Schulte	Closed	Closed

October 21, 2004	11	Standards for Median Widths in Urban Areas. Review the drawing with the Maintenance Division and update accordingly for the fill slope area of the drawing.	Brent Jensen	Closed	Closed
February 24, 2005		Standard Drawing DD 4 Approved. Closed			
October 21, 2004	12	FHWA Coordination and Approval of Standards. Review FHWA approval process with those involved at the FHWA Regional Office and present any recommended change in procedure.	Todd Emery	Closed	Closed
February 24, 2005		Approved by FHWA. Discussed at Standards Committee. UDOT 08A5-1 to be updated. Item closed			

This page left blank.

Standards Committee Agenda Items Section

Submittal Sheets, Supplemental Specification Drafts, Standard Drawing Drafts, and other supporting data for the April 28, 2005 Standards Committee meeting follows.

This page left blank.

Standards Committee Submittal Sheet

Name of preparer: Peter Negus
Title/Position of preparer: Deputy Construction Engineer
Specification/Drawing/Item Title: Prosecution and Progress 00555 Liquidated Damages Table
Specification/Drawing Number: _____

Enter appropriate priority level:

(See last page for explanation) 3

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page.
(<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

23 CFR 635.127 (Agreement provisions regarding overruns in contract time) requires UDOT to update the liquidated damages assessed when contract time overruns. The review and subsequent updating of the liquidated damage rates should be performed every two years. The liquidated damage rates were last updated in 2003 using data from the 2001 and 2002.

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

Measurement and Payment will not change.

- C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Refer to the Standards Committee Web site > Standards Committee Members at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

The AGC has not, at this time, reviewed the updated table. The AGC acknowledges the concept of liquidated damages and has not challenged updates to Table 1 Schedule of Liquidated Damages in the past.

ACEC Comments: (Use as much space as necessary.)

ACEC has not, at this time reviewed the Liquidated Damages Table.

- D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Construction Engineers

Construction Engineers have not reviewed the table at the time of this submittal.

Contractors (Any additional contacts beyond “C” above.)

Suppliers

Consultants (as required) (Any additional contacts beyond “C” above.)

Others (as appropriate)

FHWA has not reviewed the updated Liquidated Damages Table at this time. However, the FHWA will have reviewed and approved the Schedule of Liquidated Damages prior to the Standards Committee Meeting, or the Item will be removed from the agenda.

- E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

N. A.

- F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

N.A.

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

N. A.

3. Life cycle cost.

N. A.

- G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.)
(Estimates are acceptable.)

N.A.

- H. Safety Impacts?

N.A.

- I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

The values in Table 1, Schedule of Liquidated Damages are calculated using the Construction Engineering Costs that are charged to a project. Discussion was held concerning whether additional costs should be included in the calculation, such as user costs. The FHWA suggested, in past conversations, that a more defensible position would be to use actual Construction Engineering Costs for the liquidated damages that would apply to the majority of projects and if it is determined that additional liquidated damages are necessary on specific projects, due to user costs, etc., those liquidated damages should be addressed in the Special Provisions of the respective project.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

- | | |
|------------|---|
| Priority 1 | Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised. |
| Priority 2 | Upon posting, this impacts projects being advertised. |
| Priority 3 | Upon posting, the approved standard takes effect two weeks later for projects being advertised. |

This page left blank.

Original Contract Amount		Daily Charges			
From more than	To and including	Calendar Day Completion Day		Working Day	
		Current	New	Current	New
\$0	\$100,000	\$210	\$400	\$830	\$890
100,000	500,000	450	450	950	1000
500,000	1,000,000	680	520	1380	1200
1,000,000	5,000,000	1270	670	2170	1540
5,000,000	10,000,000	1860	960	2950	3210
10,000,000	30,000,000	2770	1530	4930	3500
30,000,000		*4100	4100	*8240	8240

* Value from existing table, since 2003 & 2004 projects are not within this value range

This page left blank.

Standards Committee Submittal Sheet

Name of preparer: Michelle Page

Title/Position of preparer: Research Program Manager

Specification/Drawing/Item Title: Deer Crossing/FG Series

Specification/Drawing Number: Supplemental 2827S/Drawing Numbers FG 4 A & B

Enter appropriate priority level:

(See last page for explanation) 3

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page.
(<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

Establish a statewide design/application of deer ramps and eliminate deer gates from the standard drawings since they are no longer used due to their ineffectiveness.

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

Add:

Section 02827: Deer Crossing

#	028270010	Typical Deer Crossing	Each
In place along the right-of-way fence; includes all related items of work for installing one deer ramp. (For example, clear and grub, grading, topsoil, seed, mulch, lagging, drift fence.)			

#	028270020	High Migratory Deer Crossing	Each
In place along the right-of-way fence; includes all related items of work for installing three deer ramps as well as additional fence for funneling into the middle/perpendicular deer ramp. (For example, clear and grub, grading, topsoil, seed, mulch, lagging.)			

C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site > Standards Committee Members at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

Michelle Page emailed notifications January 11, 2005

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

AGC Comments: (Use as much space as necessary.)

Michelle talked with Mont Wilson on 1/18/05. His comments concerned the material used for posts (B(AE) concrete as per Standard Specification 02822 Right-of-Way Fence and Gate.) In addition, the area of concrete around the posts (also addressed in 02822).

ACEC Comments: (Use as much space as necessary.)

E-mail response:

This e-mail is in response to your request for ACEC review and comments regarding the proposed Deer Fence and Gate drawing and specifications. I have summarized comments I received from ACEC reviewers:

1. A drift fence detail is shown on FG 4B but there is no drift fence shown anywhere on FG 4A. How and where is it to be used? (For typical deer ramps rather than high migratory crossing ramps – Added additional drawing for clarification.)
2. The whole deer ramp system looks like it would take a lot of room. Is there a minimum length for the fences that run from the ramps toward the highway? (Yes, 100 ft.)
3. On FG 4A, There appears to be no difference between a Deer Escape Ramp and a Deer Entrance Ramp. Is this correct? (Correct)

4. In the 02826 Spec why are Geotextiles listed under 1.2 Related Sections?
(Eliminated.)
5. Notes on plans and in spec are similar. They probably should be shown either on the plans or in the specifications but not both. (Duplicate notes removed from standard drawings.)

Tyler Yorgason P.E.
Civil Science, Inc

- D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Maintenance	Lynn Bernhard	Methods Engineer
Environmental	Paul West	Wildlife Program Manager
Environmental	Brent Jensen	Chief Environmental Engr.

Construction Engineers

Rick Torgerson (Project Manager for several projects with numerous deer ramps.)

Contractors (Any additional contacts beyond “C” above.)

Contacted through AGC & ACEC

Suppliers

(n/a)

Consultants (as required) (Any additional contacts beyond “C” above.)

(n/a)

Others (as appropriate)

Utah Division of Wildlife Resources

Michael Canning (Administrative)

Wildlife Habitat Managers: Bruce Bonebrake

John Pratt

Doug Sakaguchi

Rick Schultz

USGS-John A. Bissonette, Research Scientist

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

New bid items:

Typical Deer Crossing \$2,000

High Migratory Deer Crossing \$7,000

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

Minimal, if any

3. Life cycle cost.

Minimal, if any

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.)
(Estimates are acceptable.)

The following tables are from a research study submitted in November 2003 by the University of Utah. These are of value, as the installation of deer crossings has historical reduced accident rates by 50-70 percent.

Accident Severity Number	Description
1	No Injury
2	Possible Injure
3	Bruises and Abrasions
4	Broken Bones or Bleeding Wounds
5	Fatal

Years of Study: 2000-2003		Wild Animal Accidents	
Severity	Cost Per Accident	Number of Accidents	Cost in Thousands
1	\$2,300	20,629	\$47,446
2	\$6,000	582	\$3,492
3	\$45,000	418	\$18,810
4	\$565,000	293	\$165,545
5	\$3,000,000	10	\$30,000
	Total	21,932	\$265,293

Potential savings for this period range from \$132.6M to \$185.5M.

H. Safety Impacts?

Reduce number of migrating animal kills.

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

UDOT has installed nearly 50 deer ramps in the last two construction seasons, most of those as change orders and value the effectiveness of them in reducing wildlife kill on our highways. It makes sense to adopt current practices in a standard drawing that all departments can use.

Wyoming DOT has been and is continuing to improve upon the design and location for optimum effectiveness.

Currently, a Wildlife QIT is defining the identification process and creating guidelines for planners, designers, construction and maintenance personnel to follow.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

Priority 1 Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.

Priority 2 Upon posting, this impacts projects being advertised.

Priority 3 Upon posting, the approved standard takes effect three weeks later for projects being advertised.

This page left blank.

**Supplemental Specification
2005 Standard Specification Book**

SECTION 02827

DEER CROSSING

Add Section 02827:

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Materials and procedures for constructing deer crossings.

1.2 RELATED SECTIONS

- A. Section 02056: Common Fill
- B. Section 02231: Site Clearing and Grubbing
- C. Section 02822: Right-of-Way Fence and Gate
- D. Section 02911: Mulch
- E. Section 02912: Topsoil
- F. Section 02922: Seed, Turf Seed, and Turf Sod Section
- G. Section 06055: Timber and Timber Treatment

1.3 REFERENCES

- A. AASHTO M 279: Zinc Coated (Galvanized) Steel Woven Wire Fence Fabric

1.4 DEFINITIONS

- A. Typical Deer Crossing: A deer crossing that consists of a single deer ramp perpendicular to the right-of-way fence.

- B. High Migratory Deer Crossing: A deer crossing that consists of three deer ramps; two along the right-of-way fence as approached from either direction and one perpendicular to the right-of-way fence with additional fencing funneling animals that have crossed the road.

PART 2 PRODUCTS

2.1 TIMBER PLANKS

- A. Sound Lodgepole pine, Ponderosa pine, Engelmann spruce, Douglas fir, hem-fir or Western Larch of grading WWPA No. 2 that is free from decay, splits, multiple cracks or any other defect, and structurally suitable as per Section 06055.

2.2 ROUND TIMBER

- A. Use timber meeting Section 02822.

2.3 WIRE MESH FENCING

- A. As specified in AASHTO M 279.
- B. Grade 60, nominal 0.099 inch farm grade wire mesh fencing with a 6-inch vertical wire spacing.
- C. Class I zinc coating.

2.4 NAILS

- A. Use 16d galvanized nails.

2.5 BORROW

- A. Borrow. Refer to Section 02056.

PART 3 EXECUTION

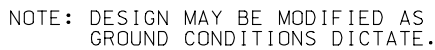
3.1 INSTALLATION

- A. Locate deer crossing by type as identified in the plans.

- B. Within the footprint of the deer crossing Clear and Grub as per Section 02231 and Strip and Stockpile 4 inches of topsoil.
- C. Install vertical posts as shown in the Deer Ramp Detail on FG Series Standard Drawings.
- D. Place end panels on both sides of the deer ramp openings. Place brace panels on each end of the 24 foot 9 inch drift fence. Refer to FG Series Standard Drawings.
- E. Securely nail ends of the nominal 2 inch x 8 inch planks to the posts with 16d nails as shown in the Deer Ramp Detail per FG Series Standard Drawings.
- F. Place borrow material for ramp as shown on the isometric view per FG Series Standard Drawings.
- G. Upon completion of borrow placement, cover the deer ramp with topsoil, seed and mulch as per Sections 02912, 02922 and 02911 respectively.
- H. Remove upper section of fence near deer ramp as shown in FG Series Standard Drawings.

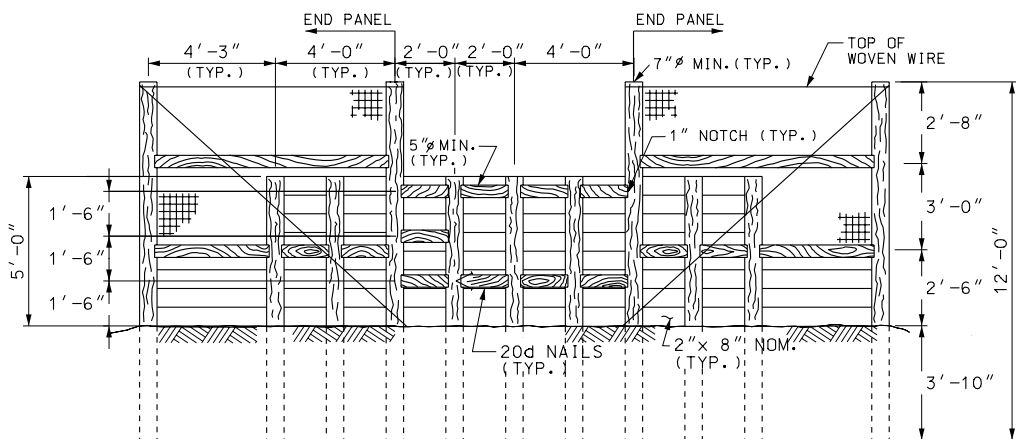
END OF SECTION

This page left blank.



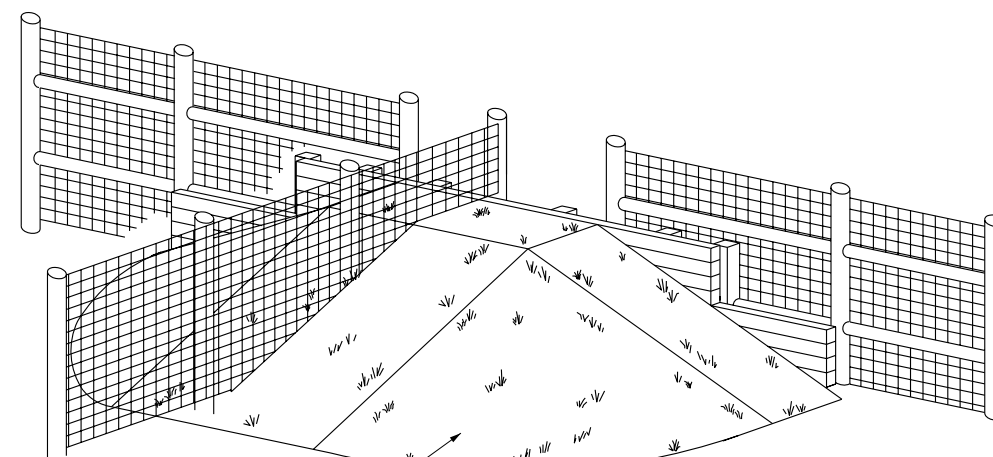
NO.	DATE	APPR.
-----	------	-------

This page left blank.



DEER RAMP DETAIL

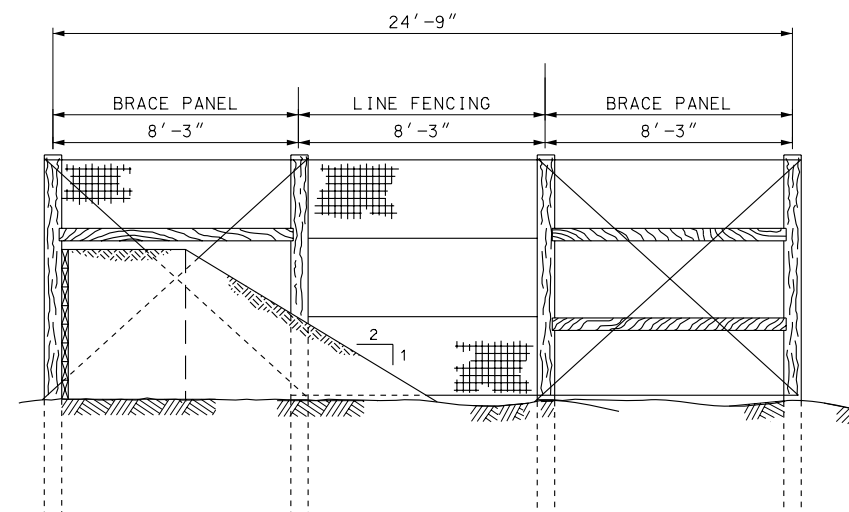
NOTE: USE 2"x6" OR 2"x8" TIMBER FOR ALL HORIZONTAL
AND LONGITUDINAL LAGGING.



TOPSOIL (4" DEEP)
BROADCAST SEED
WOOD FIBER MULCH

ISOMETRIC VIEW

NOTE: THE HIGH MIGRATORY DEER CROSSING DOES NOT
USE DRIFT FENCE DOWN CENTER OF THE DEER
RAMPS.



DRIFT FENCE DETAIL

[illegible]

This page left blank.

Standards Committee Submittal Sheet

Name of preparer: Sam Sherman

Title/Position of preparer: ITS / CVO Engineer, ATMS Standards Leader

Specification/Drawing/Item Title: Typical Ramp Meter Signal Head Mounting, Traffic Counting Loop Detector Details

Specification/Drawing Number: AT 4, SL 12

Enter appropriate priority level:

(See last page for explanation) 3

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

Standard Drawing AT 4 - Typical Ramp Meter Signal Head Mounting details, published January 2005 had errors and needed additional details.

Standard Drawing SL 12 – Traffic Counting Loop Detectors Details has been revised to add loop spacing requirements for high-speed traffic monitoring. Whereas 16 foot loop spacing is acceptable for volume counting, 21 foot spacing is more appropriate for traffic monitoring, such as speed and occupancy. The Traffic Statistics contact phone number has also been removed, since the contractor should be coordinating construction directly with the Resident Engineer.

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

No Change required.

- C. Stakeholder Notification for AGC and ACEC:

AGC Comments: (Use as much space as necessary.)

Reviewed AT 4 and SL 12 Sheets submittal prior and for the February 24, 2005 Standards Mtg, with no comments.

ACEC Comments: (Use as much space as necessary.)

Reviewed both AT 4 and SL 12 Sheets at the February 24, 2005 with no comments.

- D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Region 2 Signal Foreman, ATMS Field Supervisor and ATMS Maintenance Supervisor reviewed and commented on both drawings.

Construction Engineers

Did not review.

Contractors (Any additional contacts beyond "C" above.)

First Submittal was provided to Sorenson Construction, Hidden Peak, Hunt Electric. Appropriate comments were incorporated.

Suppliers

Input was obtained from vendors, such as Traffic Parts, Inc. Other parts catalogs such as from Econolite were reviewed.

Consultants (as required) (Any additional contacts beyond "C" above.)

UDOT ATMS System Manager / Integrator consultant, TransCore assisted UDOT in revising both AT 4 and SL 12 drawings.

Others (as appropriate)

- E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

Not applicable.

- F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

None anticipated.

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

It is anticipated that maintenance visits to these sites will be reduced as a result of removing the rubber gaskets, which continually loosened, allowing the signal heads to rotate. Water leakage has not been a problem with or without the gasket.

3. Life cycle cost.

Minimal change anticipated, due to potential reduction in maintenance costs.

- G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.)
(Estimates are acceptable.)

Quantifiable benefits are unavailable. It is anticipated that the updated drawings will provide clarity to the signal head assembly process and allow estimators to easily identify parts and assembly labor.

- H. Safety Impacts?

No change to safety impact anticipated.

- I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

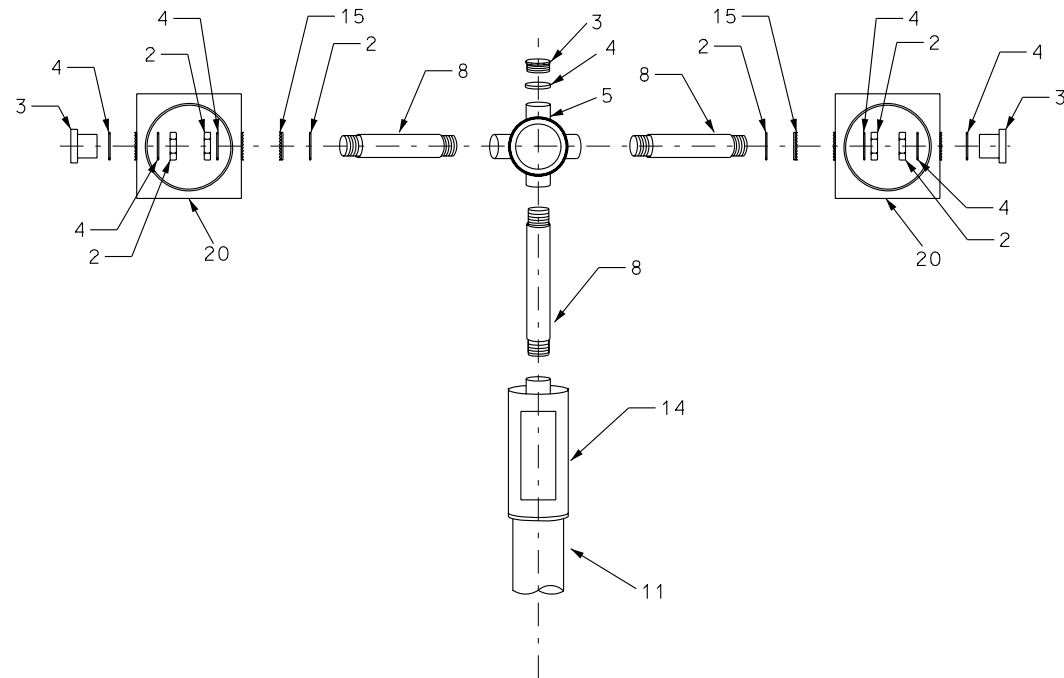
Sheets AT 4 and SL 12 were submitted during the February 24, '05 standards meeting and were not approved due to additional work needed.

Priority Explanation

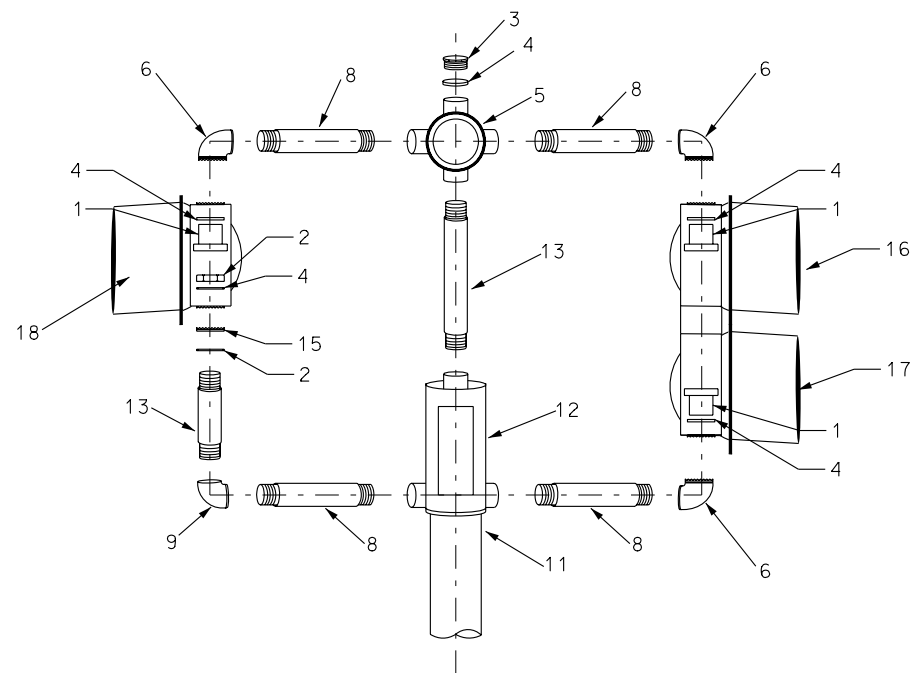
Enter the appropriate priority in the box on the first page of the document.

- | | |
|------------|---|
| Priority 1 | Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised. |
| Priority 2 | Upon posting, this impacts projects being advertised. |
| Priority 3 | Upon posting, the approved standard takes effect two weeks later for projects being advertised. |

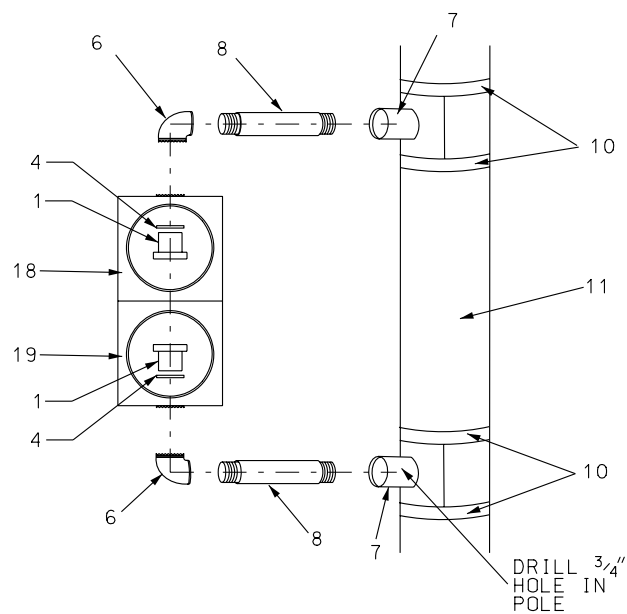
This page left blank.



A
AT 4 ADVANCE FLASHING BEACON
SIGNAL HEAD MOUNTING DETAILS



B
AT 4 TOP SIGNAL HEAD MOUNTING DETAILS
WITH ENFORCEMENT INDICATION



C
AT 4 SIDE SIGNAL HEAD MOUNTING DETAILS

DETAIL LEGEND

- | | |
|---|--|
| 1. LOCK NIPPLE, BRASS, $1\frac{1}{2}'' \times 1\frac{3}{4}''$ | 15. WASHER, SERRATED, $1\frac{1}{2}''$ |
| 2. LOCK NUT, BRASS, $1\frac{1}{2}''$ | 16. SIGNAL HEAD - RED LED, 12" |
| 3. CAP, ORNAMENTAL, LONG, BRASS, $1\frac{1}{2}'' \times 1\frac{3}{4}''$ | 17. SIGNAL HEAD - GREEN LED, 12" |
| 4. WASHER, STAINLESS STEEL | 18. SIGNAL HEAD - RED LED, 8" |
| 5. HUB, CENTER W/COVER PLATE 4-WAY, BRASS | 19. SIGNAL HEAD - GREEN LED, 8" |
| 6. ELBOW, 90°, GALVANIZED, THREADED INSIDE, $1\frac{1}{2}''$ SERRATED | 20. SIGNAL HEAD - AMBER LED, 8" |
| 7. ROUND POLE PLATE, GALVANIZED | |
| 8. PIPE, GALVANIZED, THREADED BOTH ENDS, $1\frac{1}{2}'' \times 12''$ | |
| 9. ELBOW, 90°, GALVANIZED, THREADED INSIDE, $1\frac{1}{2}''$ | |
| 10. BANDS, STAINLESS STEEL, $\frac{3}{4}''$ | |
| 11. POLE SHAFT | |
| 12. POST TOP TERMINAL COMPARTMENT, 2 WAY, BRASS, WITH NO TERMINAL BLOCK | |
| 13. PIPE, GALVANIZED, LENGTH VARIABLE, THREADED BOTH ENDS, $1\frac{1}{2}''$ | |
| 14. POST TOP TERMINAL COMPARTMENT, BRASS, WITH NO TERMINAL BLOCK | |

NOTE:

1. ALL EXTERIOR SURFACES TO BE POWDER COATED YELLOW.

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL

CHAIRMAN STANDARDS COMMITTEE
APPROVED

DEPUTY DIRECTOR

TYPICAL RAMP METER SIGNAL HEAD MOUNTING

STD DWG

AT 4

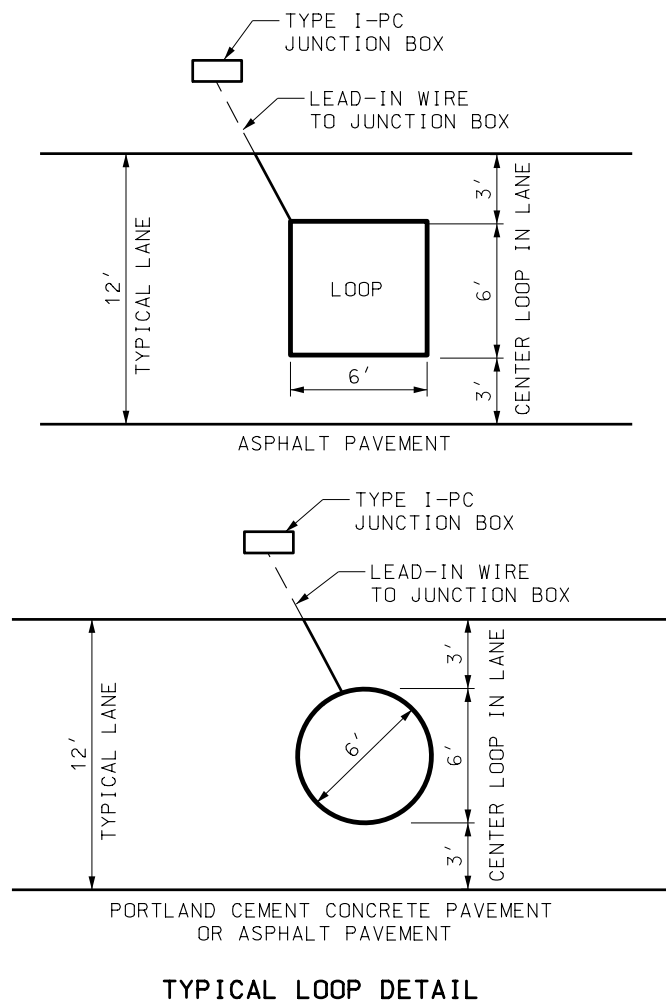
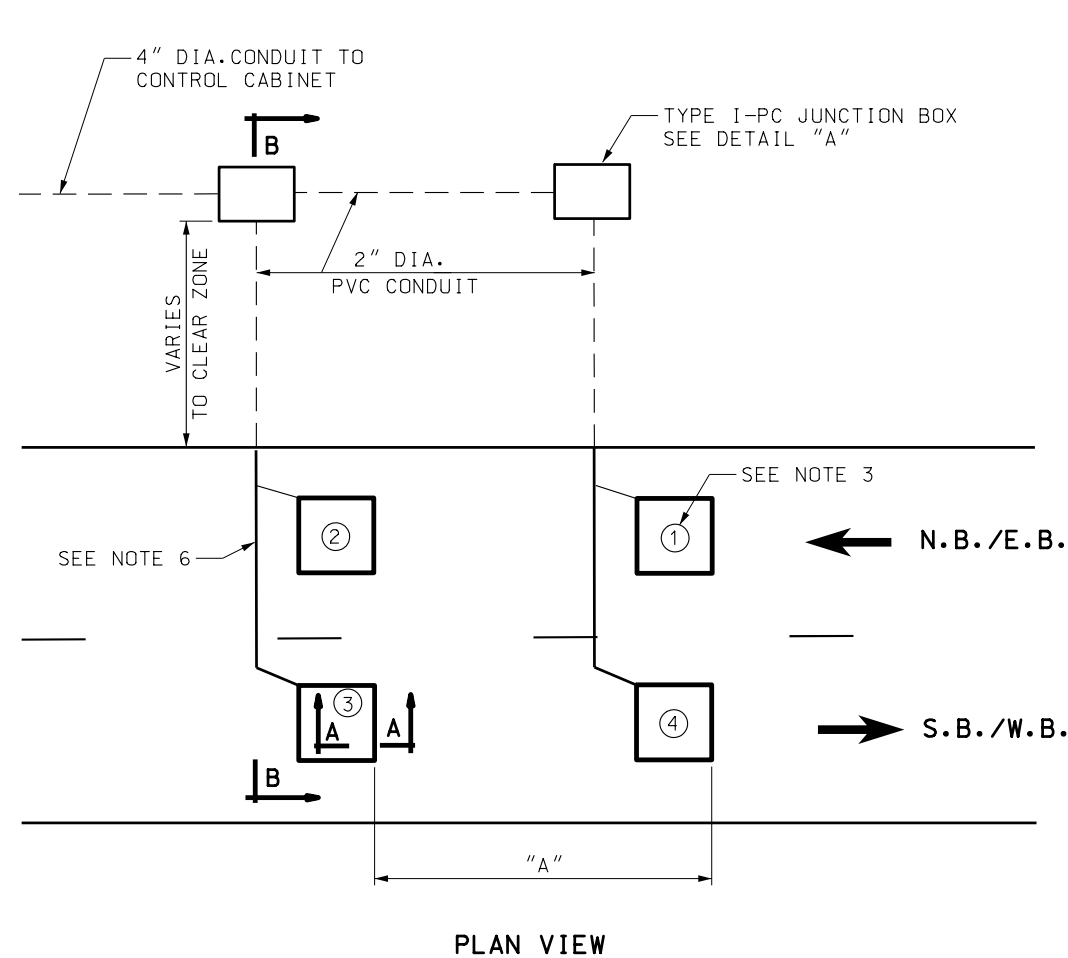
REVISIONS

1. 04/28/05 S.S. UPDATED AND REARRANGED DETAILS

REMARKS

This page left blank.

11-APR-2005 DGN File: N:\Ead\Standard Drawings\Imperial\2005\Working\Standard\CommitteeFiles\Apr05\sl12.dgn

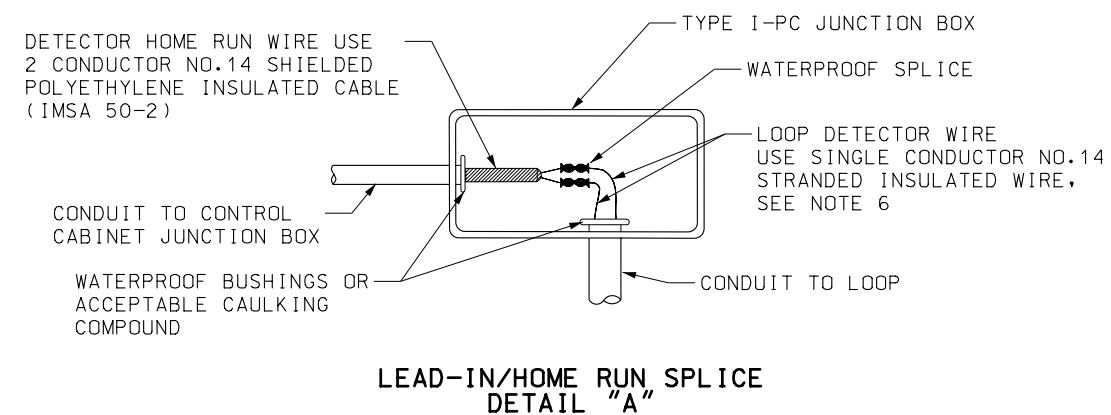
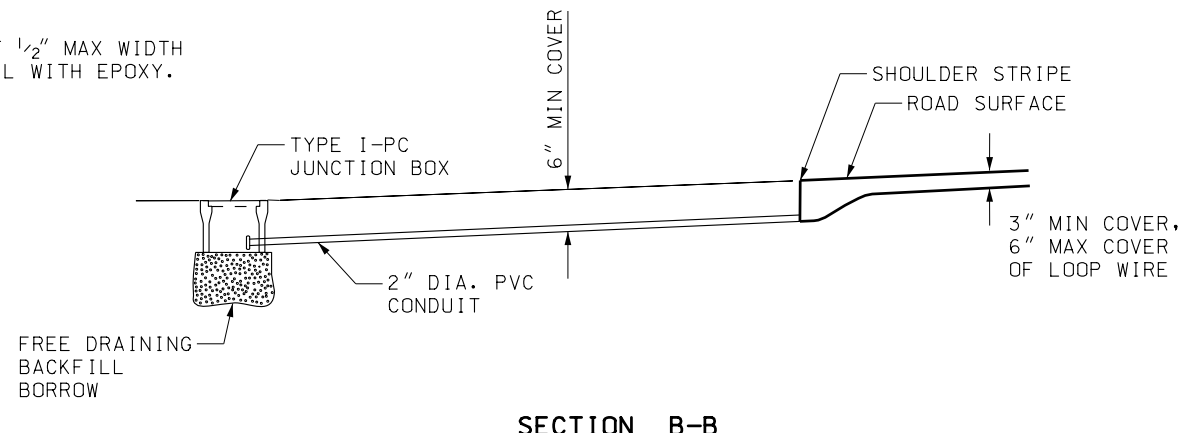
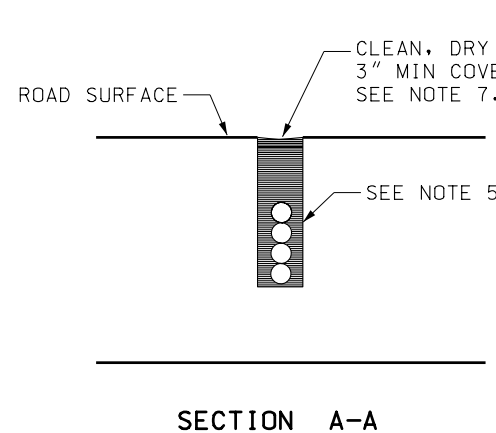


NOTES:

1. USE SCHEDULE 40 PVC CONDUIT.
2. SEE PLAN SHEETS FOR DETECTOR LOOP LOCATIONS, STATION AND OFFSET GIVEN FOR CENTER LOOP-ADJUST LOOP PLACEMENT TO AVOID CRACKED SLABS OR CUTTING THROUGH JOINTS.
3. TAG EACH LOOP WIRE IN EACH JUNCTION BOX. NUMBER EACH LOOP CONSECUTIVELY. BEGIN WITH FIRST LOOP IN NORTH BOUND (EAST BOUND) LANE CLOSEST TO SHOULDER - IN DIRECTION OF TRAFFIC, THEN SECOND LOOP IN SAME LANE, THEN ADJACENT LANE, ENDING WITH SECOND LOOP IN OPPOSITE DIRECTION LANE CLOSEST TO SHOULDER.
4. USE SEPARATE WIRE FOR EACH LOOP. EACH LOOP WIRE TO BE CONTINUOUS, WITH NO SPLICES, EXCEPT WITH THE LEAD-IN WIRE AT THE JUNCTION BOX.
5. ALL LOOPS TO HAVE FOUR TURNS OF WIRE IN THE SAME DIRECTION, COUNTER CLOCKWISE. DO NOT TWIST WIRES IN LOOP.
6. TWIST WIRES BETWEEN LOOP AND JUNCTION BOX. ONE TWIST PER FOOT IN SAW CUT, THREE TWISTS PER FOOT IN CONDUIT.
7. INSTALL ALL CONDUCTORS IN SAW CUT. PLACE CABLE OR WIRE AT BOTTOM OF DRY SLOT. USE EPOXY SEAL WHICH DOES NOT CONTAIN ACETONE SOLVENT TO CLOSE SAW CUT.

TABLE 1. LOOP SPACING

LOOP TYPE	"A"
TRAFFIC COUNTING LOOP FOR PERMANENT COUNT STATIONS	16' ± 1"
TRAFFIC MONITORING STATION FOR ATMS	21' ± 1"



UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

TRAFFIC COUNTING
LOOP DETECTOR
DETAILS

STD DWG
SL 12

REVISIONS
1 04/28/05 S.S. NOTES UPDATED, TABLE ADDED.

RECOMMENDED FOR APPROVAL
CHAIRMAN STANDARDS COMMITTEE
APPROVED
DEPUTY DIRECTOR
DATE
APR.28,2005
DATE
APR.28,2005

STANDARD DRAWING TITLE

REMARKS

This page left blank.

Standards Committee Submittal Sheet

Name of preparer: Barry Axelrod

Title/Position of preparer: Technical Writer

Specification/Drawing/Item Title: Standards Committee Policy - 08A5-1

Specification/Drawing Number: N/A

Enter appropriate priority level:

(See last page for explanation) N/A

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page. (<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

The policy is being updated for the following:

1. Add a step for the complete of the submittal sheet to procedure 1. This would allow all Stakeholders a two-week response time to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks. The AGC/ACEC coordination had this two-week time and the regions asked for the same.
2. Text indicating that the submittal sheet not needed for editorial and minor changes was removed. The submittal sheet is required for all items so an introduction is available for each agenda item. Complete coordination may not be needed for these types of changes.
3. In the Preparation of Minutes and Distribution of Minutes and Approved Items procedure, the 15-day requirement to publish changes was changed to 10 days to meet section performance measures and get changes out to customers quicker.
4. The Approval By FHWA procedure updated based on new agreement with FHWA regarding approval of approved changes.

5. Submittal sheet header updated to remove unnecessary information.
 6. Note on two-week time frame added to AGC/ACEC and Stakeholder steps.
 7. Clarification note added to Stakeholder, Contractor and Consultant steps to reference AGC/ACEC step.
 8. Minimum Sampling and Testing step added per request from Materials.
 9. Benefits step added per Standards Committee discussions.
 10. Priority Three time frame changed from two weeks to three weeks based on region request and requirement for the review of the Engineers Estimate. The review of the Engineers Estimate currently uses up most if not all of the two week time period. Consideration also given to increasing the time to four weeks.
- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

N/A

- C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site > Standards Committee Members at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

Can be covered at the Standards Committee meeting.

ACEC Comments: (Use as much space as necessary.)

Can be covered at the Standards Committee meeting.

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

N/A

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

N/A

F. Costs? (Estimates are acceptable.)

N/A

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)

Better coordination and implementation of changes.

H. Safety Impacts?

N/A

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

N/A

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

Priority 1 Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.

Priority 2 Upon posting, this impacts projects being advertised.

Priority 3 Upon posting, the approved standard takes effect three weeks later for projects being advertised.

This page left blank.

Standards Committee

Effective: June 30, 1967
~~24, 2004~~

UDOT 08A5-1

Revised: ~~April 28, 2005~~ June

Purpose

To establish the procedure and place responsibility for the development, revision, and preparation of standard drawings, specifications, and related policies and procedures, and for their review, approval, printing, and distribution.

Policy

The Standards Committee reviews and approves all standard drawings, specifications, supplemental specifications, and related policies and procedures prior to implementation. The Committee also considers relevant matters presented to it by interested units or individuals, formulating appropriate action within its scope of responsibility.

The Standards Committee is composed of eight permanent members, with the Project Development Engineer as chairperson and the Standards and Specifications Engineer serving as secretary. Membership, representing the offices, divisions, sections, or units as indicated, is as follows:

Members

Director, Project Development

Region Director (Appointed by the Deputy Director)

Director, Engineering Services

Director, Construction and Materials

Engineer for Materials

Engineer for Maintenance

Engineer for Traffic & Safety

State Bridge Engineer

Advisory Members

Federal Highway Administration (FHWA)

Associated General Contractors (AGC)

American Council of Engineering Companies, Utah Branch (ACEC)

Members should appoint a substitute when the member is unable to attend a meeting. The substitute assumes full authority to bind the represented division to a decision by vote or other action in matters pertaining to the Standards Committee. Qualified individuals will continually fill all positions.

Temporary advisory members may be selected by the Committee to advise and assist when specialized talents are needed. Advisory members do not have the power to vote. However, FHWA approval is required for all standard drawings, standard specifications, and supplemental specifications, where Federal participation is anticipated.

Robert's Rules of Order will generally be followed, and in matters not provided for or not applicable, the Committee may formulate its own rules of procedure. Five members are required to constitute a quorum. As a matter of rule, items presented at a regularly scheduled meeting can be approved at that meeting if Attachment 1 has been completed in sufficient detail for the Committee to make an approval decision. Items presented at special meetings will be handled on a case-by-case basis.

Meetings are normally scheduled for the last Thursday, every other month, starting at 8:00 a.m., for four hours. The chairman may call or cancel a meeting, depending upon the quantity and urgency of the business at hand. Three or more of the permanent members may also call meetings.

The Deputy Director has final approval authority of actions of the Standards Committee.

The Deputy Director approves all membership changes.

Definitions

Sponsor

An individual or task force (appointed by the Chairman of the Standards Committee) presenting an item to the Standards Committee. The sponsor should be a member of the Standards Committee or be in contact with a Committee member who is familiar with the subject matter contained in the document.

Technical Staff Support

That support provided by the Standards and Specifications Section to the sponsor identifying the need for a new or revised document. Works closely with the sponsor or with a task force in the actual preparation of draft or final documents, including supporting documentation.

That support provided by the Standards and Specifications Section to take actions related to meeting minutes and agenda.

Draft Document

Document prepared for review by the Standards Committee and conforming to specified guidelines.

Final Document

Documents prepared from approved drafts for final review and approval by the Standards Committee and conforming to specified guidelines.

Procedures

Preparation and Approval of Documents by the Standards Committee UDOT 08A5-1.1

Responsibility: Sponsor

Actions

1. Determine need to develop new or revised standard drawings or specifications or the need to present information of interest to the Committee.

Responsibility: Sponsor (with assistance from the Standards & Specifications Section)

2. Prepare draft of new or revised specifications, standard drawings, or general information as specified below.
 - (a) Specifications, Supplemental Specifications. In the case of a revised document, prepare the draft with the “**MS Word Track Changes**” option turned on.
 - (b) Standard Drawings. Prepare the draft.
 - (c) General Information. Prepare the draft in a format suitable for the information.

3. Complete all Submittal Sheet Requirements

(a) Allow all Stakeholders a two-week response time to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

- ~~3.~~ (b) Complete Procedure 08A5-1.4, Stakeholder Notification and return to the next step on completion of Procedure 08A5-1.4 or after 14 calendar days if no comments are received.

4. Submit all pertinent information including a completed attachment 1, specifications, or drawings to the Standards & Specifications Section at least fourteen working days before a regularly scheduled Standards Committee meeting. Refer to the Standards Committee Web site at <http://www.udot.utah.gov/index.php/m=c/tid=303> for meeting dates and deadlines. Include all electronic files where possible. ~~(Attachment 1 not required for editorial or minor changes)~~

Responsibility: Standards & Specifications Section

5. Review related documents and make any changes that may be required as a result of the draft of new or revised standard drawings, specifications, or information.
6. Prepare the agenda in accordance with UDOT procedure 08A5-1.2.
7. Publish the entire package to the Standards Committee Web site and send out email notice of publication in accordance with UDOT procedure 08A5-1.2.

Responsibility: Standards Committee Members

8. Review the agenda with attachments prior to the Committee meeting.

Responsibility: Sponsor/Presenter

9. Present the draft of new or revised standard drawings, specifications, or general information with supporting documentation and explanation to the Standards Committee.

Responsibility: Standards Committee

10. Take one of the following actions:
 - (a) Discuss the standard drawing, specification, or information as presented. Approve the item as presented, or.
 - (b) Discuss the standard drawing, specification, or information as presented. Approve the item with changes, or
 - (c) Refer the standard drawing, specification, or information back to the Sponsor so that the Sponsor can make required changes before bringing the item back to the Committee, or
 - (d) Reject/defer the standard drawing, specification, or information.

Responsibility: Sponsor and Standards & Specifications Section

11. When either step 10 (a) or 10 (b) is taken, prepare the final copy of the standard drawing, specification, or information as required and as specified below.
 - (a) Specifications, Supplemental Specifications. Remove all markings made in accordance with item 2A above. Place the effective date of the change on the document. The effective date is the approval date (meeting date) unless the Committee approves a future date. Make any approved or editorial changes in accordance with Step 13.

- (b) Standard Drawings. Make any approved or editorial changes in accordance with Step 13. On the final drawing(s), place the approval date in both “Recommended for Approval” and “Approved” date lines. The dates are the date that Standards Committee approves the drawing. Complete the “Revisions” section.
 - (c) General Information. Prepare the final copy in a format suitable for the information. Make any approved or editorial changes in accordance with step 13.
- 12. When step 9(c) is taken, make the necessary changes and go back through steps 2 through 11.

Responsibility: Sponsor

- 13. Make the editorial changes to an approved item and send electronic files to the Standards & Specifications Section within **five** working days from the date of the meeting. If approved with no changes, check with the Standards Section to make sure they have all needed files.

Responsibility: Standards & Specifications Section

- 14. For approved standard specifications, supplemental specifications or standard drawings complete step 16 of UDOT procedure 08A5-1.2.

Preparation of Minutes and Distribution of Minutes and Approved Items UDOT 08A5-1.2

Responsibility: Standards and Specifications Section

Actions

1. Attend Standards Committee meeting and as required, gather information needed to transcribe meeting minutes.
2. Following the meeting, prepare a draft of the minutes for review by the Committee Secretary.

Responsibility: Standards Committee Secretary

3. Review and edit the draft of the meeting minutes.

Responsibility: Standards and Specifications Section

4. Gather information needed to prepare agenda for the next meeting.
5. Make required changes to the meeting minutes.
6. Update the agenda section of the minutes.
7. Review all submitted files and information.
8. Create PDF files of submitted items and compile into one PDF file package.
9. Publish the agenda package to the Standards Committee Web site at least ten working days prior to the next regularly scheduled meeting.
10. Send an e-mail to the “Standards Committee Issues” group advising them that the agenda package has been published to the Standards Committee Web site.
11. Make and distribute hard copies of the package to the Chairman and the Standards Section.

Responsibility: Standards Committee

12. Approve with or without modifications, the minutes of the previous meeting.
13. Take action on agenda items in accordance with UDOT procedure 08A5-1.1.

Responsibility: Standards and Specifications Section

14. Make any required changes to the meeting minutes.
15. File the minutes as required.
16. Publish all changes within ~~ten~~fifteen working days from the last Standards Committee meeting.

Approval By FHWA

UDOT 08A5-1.3

Responsibility: Standards and Specifications Section

Actions

1. Notify FHWA in accordance with 08A5-1.2, Step 10 that the minutes agenda package has been published to the Standards Committee Web site. ~~Compile an approval memo as part of each change to the Standard Specifications and Standard Drawings.~~
2. ~~Submit the packet as soon as possible after the changes have been prepared.~~

Responsibility: FHWA

23. Distribute the agenda package downloaded from the Standards Committee Web site within the FHWA Division Office for review and comment as appropriate. ~~Review and process approval of all submitted packets for use on Federal aid projects.~~
34. Provide comments during the regularly scheduled Standards Committee meeting. ~~Provide letter of approval to UDOT.~~

Responsibility: Standards and Specifications Section and Standards Committee

4. Complete UDOT 08A5-1.1, Step 10 to discuss FHWA comments
5. Complete remaining procedural steps for approved items beginning at UDOT 08A5-1.1, Step 11.

Stakeholder Notification

UDOT 08A5-1.4

Responsibility: Sponsor

Actions

1. Send a copy of the proposed Standard Specification, Supplemental Specification or Standard Drawing and Submittal Sheet by email to the AGC and ACEC Standards Committee representative. If no Submittal Sheet is available provide a memo that outlines the change and the reason for the change.
2. Refer to the Standards Committee Web site, Members page at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

3. Coordinate with all additional stakeholders in accordance with the Submittal Sheet.

Responsibility: AGC/ACEC Committee Member

34. Select at least two AGC or ACEC members each from respective membership to review and comment on the proposed change.
45. Provide comments by return e-mail within 14 calendar days to the Sponsor.

Responsibility: Stakeholders

6. Review and comment on the proposed change.
7. Provide comments by return e-mail within 14 calendar days to the Sponsor.

Responsibility: Sponsor

58. Return to Procedure 08A5-1, step 4 and continue the process.

Attachment 1 - Standards Committee Submittal Sheet

Standards Committee Submittal Sheet

Name of preparer: _____
Title/Position of preparer: _____
Specification/Drawing/Item Title: _____
Specification/Drawing Number: _____

Enter appropriate priority level:

(See last page for explanation) _____

Name of preparer: _____
Title/Position of preparer: _____
Specification/Drawing/Item Title: _____
Specification/Drawing Number: _____
Date Process Started: _____ Date Process Completed: _____
Status: ☐ Approved ☐ Disapproved ☐ Sent Back For Review

Enter appropriate priority level:

(See last page for explanation) _____

Sheet not required on editorial or minor changes to standards. Check with Standards Section.

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page.
(<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site, Members page at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

ACEC Comments: (Use as much space as necessary.)

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Construction Engineers

Contractors (Any additional contacts beyond "C" above.)

Suppliers

Consultants (as required) (Any additional contacts beyond “C” above.)

Others (as appropriate)

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

FE. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.
2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).
3. Life cycle cost.

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.)

HF. Safety Impacts?

IG. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

|

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

Priority 1 Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.

Priority 2 Upon posting, this impacts projects being advertised.

Priority 3 Upon posting, the approved standard takes effect ~~two~~four weeks later for projects being advertised. |

Standards Committee Submittal Sheet

Name of preparer: Barry Axelrod

Title/Position of preparer: Technical Writer

Specification/Drawing/Item Title: Standard Drawing 1B and 1C Index Sheets

Specification/Drawing Number: N/A

Enter appropriate priority level:

(See last page for explanation) N/A

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page.
(<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

Standard Drawing sheets 1B and 1C are being proposed for deletion. These sheets list all current Standard Drawings and the most recent approval date for each drawing.

The current process for the use of Standards, specifications and drawings, is that all apply on each project with applicability set by the bid items. This general thinking has been discussed several times during past Standards Committee meetings to include the possible removal of sheets 1B and 1C.

Currently the Table of Contents files used for Federal and State projects includes a Standard Drawing Index for projects that require 8 ½ x 11 plan sheets. This same Index is also part of the Standard Drawing book. Having sheets 1B and 1C is redundant, requiring additional work by the Standards Section in publishing the drawings as well as designers in putting projects together. Because all drawings apply on each project, having to check the applicable boxes for drawings on these sheets is not needed.

The Standard Drawing Index also has check boxes that should also be removed for the same reason. Initially the thought was this Index could be added to the full size plan sheet Table of Contents (TOC) files so that the Index is readily available on all projects, showing the current date of each drawing. Comments below indicated the Index is not needed in any of the TOC files.

As drawings change the Index currently part of the drawing set is updated and an archive maintained by the Standards Section and available on the Web site. The archive provides drawing files that were in effect just prior to the time a change is posted.

The Plan Sheet codes would also have to be updated to remove reference to the two sheets. Information on the Plan Sheet Codes is available from <http://www.udot.utah.gov/download.php/tid=1104/PlanSheetCodes.pdf> .

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

N/A

- C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site > Standards Committee Members at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

E-mail sent for coordination. No reply received at time of publication of the agenda package.

ACEC Comments: (Use as much space as necessary.)

The following comments are from ACEC members in response to inquiry about problems associated with removing sheets 1B and 1C from the ACEC standpoint: **(Standards Section comments in bold following the comment.)**

Comment 1 (Washington Group):

The standard drawings will always need an index. As far as checking which one belong to the project, that is a different matter. Now that the standard drawings are no longer included in the bid package, i.e. UDOT don't have to pull the standards drawings checked in sheets 1B and 1C, checking the drawings don't make as much sense. But if UDOT wants to hold a contractor responsible for following a standard they should keep an index of those standards. The index in a set of plans would give the contractor at least a starting place to look for a detail if no detail was prepared. **All current and replaced drawings are available from the Standards Web area. An index is available in the on-line and printed versions of the drawings. Changed drawings are referenced in the TOC portion of the bid package.**

All standard drawings do not apply to all jobs since the required work items vary from job to job. The designer should give the contractor as much information as possible. By checking the appropriate boxes on the index sheets we have shown the contractor/designer what standard we are using. **Failing to check all applicable drawings has the potential for future problems should construction problems occur.**

I think that we should continue to include sheets 1B and 1C. **Updated index sheets in a Word and PDF format are available on-line.**

Comment 2 (Lochner):

We think it would save time by not including these sheets in the plan sets, but we do have a couple of concerns/questions.

1. Would there be some kind of index or table of contents page that would replace those sheets? **An index already exists that has the same data and is a part of the pdf drawing file on the Web. As changes are issued the index is updated with the approval date of modified drawings, new drawings with approval date, and deleted drawings removed. The layout is in Word and displays vertically, not like the 1B/1C drawings. The same information on the 1B/1C is on this index. A new index is issued with each drawing change to replace the one in the complete set of drawings. If the 1B/1C are deleted there is no loss of information. Currently the Word formatted index is included in two of the four TOC files but is being considered for removal from all TOCs.**

2. How would the versions/updates of standard drawings be tracked during construction? **The advertising set includes the TOC referenced above. The TOC also has a listing of changed drawings by date. Current drawings and drawings in effect prior to a change are available on the Internet.**

Comment 3 (Civil Science):

We would prefer removing those two sheets to minimize confusion and to reduce effort in preparing plans. The two sheets don't necessarily add much information for the contractor.

It may be helpful to note somewhere in the spec package the publication date of the current or applicable standard drawing set for each project. **Already part of the advertising package.**

If there is any doubt about which Standard Drawing is being referenced for any part of a project, it seems like it should be referred to specifically by a note in the plan set, whether sheets 1B and 1C are in the set or not. Not only should the drawing number be referenced, but also any detail, section or view name that may be applicable. It might be helpful to come up with a uniform or consistent way to refer to Standard Drawings in plan sets. **Within Standard Specifications all drawing references are by series. Within Standard Drawings references are to specific drawing numbers. The format is already set for Standards and can easily be adopted for plans.**

- D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

The removal of Sheets 1B and 1C were discussed with all four regions during recent visits by the Standards Section. They concurred that the sheets are not needed. These meeting included Region Preconstruction to include designers. Project Managers were also in attendance. In most cases they didn't see a need to check which drawings applied on a particular project.

If the sheets are removed the plan was to have the Word index included in all four TOC files instead of just the "8 1/2 x 11 plan sheet" TOC files. Region 1 didn't think the sheets were even needed in any TOC file, particularly if the check mark requirement didn't exist. They suggested the drawings be included by reference, the same as the Standard Specifications. The TOC files can easily be updated. A list of changed drawings for each numbered change is already included.

Tim Rose, R2, stated “from a Design stand point, I don't see a problem with eliminating Sheets 1B and 1C.”

Phil Huff, R3, stated “I think one of the reasons to keep 1B and 1C was to document the standard used for the project as a record if there are lawsuits in about 10 years. The project date could be tracked to the standard date, but the standard may change during the construction period or the actual construction may be delayed and the standards change during the delay. I assume that once a project was under construction that the standards would not change. If the standard changes had to be incorporated during the construction period, there would be additional change orders and project costs.” Comment: The Standards Section maintains drawing and change history.

Darrell Giannonatti and Robert Westover didn’t have a problem with the change.

Construction Engineers

Still coordinating.

Contractors (Any additional contacts beyond “C” above.)

No additional. Covered above.

Suppliers

N/A

Consultants (as required) (Any additional contacts beyond “C” above.)

Farrell Wright, Michael Baker: Yes , all drawings apply to a project just as the standard specifications apply. I believe that it is extra work and you should ask Mont if the contractors really use sheets 1B and 1C. I vote we eliminate the two sheets.

Others (as appropriate)

N/A

- E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

N/A

- F. Costs? (Estimates are acceptable.)

N/A

- G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.)
(Estimates are acceptable.)

No redundancy.

- H. Safety Impacts?

N/A

- I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

N/A

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

- | | |
|------------|---|
| Priority 1 | Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised. |
| Priority 2 | Upon posting, this impacts projects being advertised. |
| Priority 3 | Upon posting, the approved standard takes effect four weeks later for projects being advertised. |

2005 - U.S. Standard Units (Inch-Pound Units) March 14, 2005

Table of Contents

Project #

Example for Standards Committee Review

- | | | |
|------------------------------|---|--|
| I. | Statement of 2005 Standard Specifications for Road and Bridge Construction <u>and</u>
<u>2005 Standard Drawing</u> applicability | |
| II. | List of Revised Standard Drawings (March 14, 2005) | |
| III. | Materials Minimum Sampling and Testing | |
| IV. | Notice to Contractors | |
| V. | Bidding Schedule | |
| VI. | Measurement and Payment | |
| VII. | PDBS Project Summary Report and Detailed Stationing Summaries Report | |
| VIII. | Location Map | |
| IX. | Typical Sections or Detail Sheets | |
| X. | Standard Drawing Index | |
| X I . | Use of Minority or Women Owned Banks | |
| XI I . | Bid Conditions Disadvantaged Business Enterprise (March 14, 2005) | |
| XII I . | Attention Contractors | |
| XIII I <u>V</u> . | Specific Equal Employment Opportunity Responsibilities | |
| XI I <u>V</u> . | Required Contract Provisions, Federal-Aid Construction Contracts (PR-1273) | |
| XVI I . | Wage Rates Applicable/Wage Rates Non-Applicable | |

XVII. Special Provisions and Supplemental Specifications (**March 14, 2005**)

1. List all Special Provisions and Supplemental Specifications here by Section Number and Title. (After entering each item press the Enter key. Paragraph number should automatically increment.) (If a Section has both a Special Provision and Supplemental Specification, list the Special Provision first.)

I. 2005 Standard Specifications and 2005 Standard Drawings

The State of Utah Standard Specifications for Road and Bridge Construction, U.S. Standard Units (Inch Pound Units), Edition of 2005 applies on this project as a static Specification Book as well as all other applicable specification changes.

The State of Utah Standard Drawings, Edition of 2005 applies on this project.

Refer to Part II (List of Revised Standard Drawings) for changes to the 2005 Edition of the Standard Drawings.

Refer to Part XVII (Special Provisions and Supplemental Specifications) for other project specific specifications.

II. List of Revised Standard Drawings

Change One

Revised February 24, 2005

AT 1	Legend Sheet	02/24/2005
AT 2	Ramp Meter Details	02/24/2005
AT 3	Ramp Meter Sign Panel	02/24/2005
AT 5	Ramp Meter Loop Installation	02/24/2005
AT 6	Conduit Details	02/24/2005
AT 7	Polymer-Concrete Junction Box Details	02/24/2005
AT 8	ATMS Cabinet	02/24/2005
AT 9	ATMS Cabinet Disconnect And Transformer Frame	02/24/2005
AT 10	CCTV Mounting Details	02/24/2005
AT 11	CCTV Pole Details	02/24/2005
AT 12	CCTV Pole Foundation For Dedicated CCTV Pole	02/24/2005
AT 13	Deleted	N/A
AT 14	Weigh In Motion Piezo Details	02/24/2005
AT 15	RWIS Site And Foundation Details	02/24/2005
AT 16	RWIS Tower Base And Service Pad Layout	02/24/2005
AT 17	Ground Rod Installation And Tower Grounding	02/24/2005
AT 18	TMS Detection Zone Layout	02/24/2005
BA 3	Deleted	N/A
BA 3A	Cast In Place Constant Slope Barrier	02/24/2005
BA 3B	Precast Concrete Constant Slope Transition Section For Crash Cushion And W-Beam Guardrail	02/24/2005
BA 4B	W-Beam Guardrail Transition	02/24/2005
BA 4C	W-Beam Guardrail Transition Curb Section	02/24/2005
CC 7	Deleted	N/A
CC 7A	Grading And Installation Details Crash Cushion Type F Quad Trend 350	02/24/2005
CC 7B	Reserved For Future Use	N/A
CC 8	Deleted	N/A
CC 8A	Grading And Installation Details Crash Cushion Type G	02/24/2005
CC 8B	Grading And Installation Details For "3R" Projects Crash Cushion Type G	02/24/2005
CC 9A	Grading And Installation Details Crash Cushion Type H	02/24/2005
CC 9B	Grading And Installation Details Crash Cushion Type H (Parabolic Flare)	02/24/2005
DD 4	Geometric Design for Freeways (Roadway)	02/24/2005
FG 3	Swing Gates Type I For Gates Less Than 17'	02/24/2005
ST 5	Painted Median And Auxiliary Lane Details	02/24/2005

STANDARD DRAWINGS INDEX (Change 1, Dated 03/14/05)
UTAH DEPARTMENT OF TRANSPORTATION

NUMBER	TITLE	CURRENT DATE
Advanced Traffic Management System (AT)		
AT 1	Legend Sheet	02/24/05
AT 2	Ramp Meter Details	02/24/05
AT 3	Ramp Meter Sign Panel	02/24/05
AT 4	Typical Ramp Meter Signal Head Mounting	01/01/05
AT 5	Ramp Meter Loop Installation	02/24/05
AT 6	Conduit Details	02/24/05
AT 7	Polymer-Concrete Junction Box Details	02/24/05
AT 8	ATMS Cabinet	02/24/05
AT 9	ATMS Cabinet Disconnect And Transformer Frame	02/24/05
AT 10	CCTV Mounting Details	02/24/05
AT 11	CCTV Pole Details	02/24/05
AT 12	CCTV Pole Foundation For Dedicated CCTV Pole	02/24/05
AT 13	Not Used	
AT 14	Weigh In Motion Piezo Details	02/24/05
AT 15	RWIS Site And Foundation Details	02/24/05
AT 16	RWIS Tower Base And Service Pad Layout	02/24/05
AT 17	Ground Rod Installation And Tower Grounding	02/24/05
AT 18	TMS Detection Zone Layout	02/24/05
Barriers (BA)		
BA 1A	Precast Concrete Full Barrier Standard Section	01/01/05
BA 1B	Precast Concrete Full Barrier Standard Section	01/01/05
BA 1C	Precast Concrete Barrier Terminal For Speed \leq 40 MPH	01/01/05
BA 1D	Precast Concrete Full Section Median Installation	01/01/05
BA 1E	Precast Concrete Full Section Shoulder Applications	01/01/05
BA 2	Precast Concrete Half Barrier Standard Section	01/01/05
BA 3A	Cast In Place Constant Slope Barrier	02/24/05
BA 3B	Precast Concrete Constant Slope Transition Section For Crash Cushion And W-Beam Guardrail	02/24/05
BA 4A	W-Beam Guardrail Hardware	01/01/05
BA 4B	W-Beam Guardrail Transition	02/24/05
BA 4C	W-Beam Guardrail Transition Curb Section	02/24/05
BA 4D	W-Beam Guardrail Anchor Type I	01/01/05
BA 4E	W-Beam Guardrail Installations	01/01/05
BA 4F	W-Beam Guardrail Typical Divided Roadways	01/01/05
BA 4G	W-Beam Guardrail Typical Multilane Arterial	01/01/05
BA 4H	W-Beam Guardrail Typical 2 Lane 2 Way	01/01/05
BA 4I	W-Beam Guardrail Buried In Backslope Terminal	01/01/05
BA 4J	W-Beam Guardrail Buried In Backslope Terminal With Rub Rail	01/01/05
BA 4K	W-Beam Guardrail Buried In Backslope Terminal Anchor	01/01/05
BA 4L	W-Beam Guardrail Curve Details	01/01/05

BA 4M	W-Beam Guardrail Nested Guardrail 12' 6" Span	01/01/05
BA 4N	W-Beam Guardrail Nested Guardrail 18' 9" Span	01/01/05
BA 4O	W-Beam Guardrail Nested Guardrail 25' Span	01/01/05
BA 4P	W-Beam Guardrail With Precast Barrier For Span > 25'	01/01/05

Catch Basins And Cleanouts (CB)

CB 1	Curb and Gutter Inlet	01/01/05
CB 2	Open Curb Inlet	01/01/05
CB 3	Shallow Catch Basin	01/01/05
CB 4	Open Curb Shallow Catch Basin	01/01/05
CB 5A	Standard Catch Basin and Cleanout Box	01/01/05
CB 5B	Standard Catch Basin and Cleanout Box Section	01/01/05
CB 6A	Drop Inlet Type "A"	01/01/05
CB 6B	Berm Apron With Drop Inlet Type "A"	01/01/05
CB 7A	Drop Inlet Type "B"	01/01/05
CB 7B	Normal Apron With Drop Inlet Type "B"	01/01/05
CB 8A	Double Catch Basin	01/01/05
CB 8B	Double Catch Basin	01/01/05
CB 9A	Standard Catch Basin And Cleanout Box Situation And Layout	01/01/05
CB 9B	Standard Catch Basin And Cleanout Box Section Details	01/01/05
CB 9C	Standard Catch Basin And Cleanout Box Schedule Of Installation 18" to 42" RCP 12" to 48" CMP	01/01/05
CB 9D	Standard Catch Basin And Cleanout Box Schedule Of Installation 48" to 66" RCP 60" to 78" CMP	01/01/05
CB 10A	Standard Catch Basin And Cleanout Box Situation And Layout	01/01/05
CB 10B	Standard Catch Basin And Cleanout Box Section Details	01/01/05
CB 10C	Standard Catch Basin And Cleanout Box Schedule Of Installation 42" to 60" RCP 48" to 72" CMP	01/01/05
CB 11	Standard Manhole	01/01/05

Crash Cushions (CC)

CC 1	Crash Cushion Markings	01/01/05
CC 2	Crash Cushion Drainage Details Guideline A	01/01/05
CC 3	Crash Cushion Drainage Details Guideline B	01/01/05
CC 4	Details For Placement Crash Cushions Type A, B, And D	01/01/05
CC 5	Grading And Placement Details Crash Cushion Type C	01/01/05
CC 6	Crash Cushion Type E Sand Barrel Details	01/01/05
CC 7A	Grading And Installation Details Crash Cushion Type F Quad Trend 350	02/24/05
CC 7B	Reserved For Future Use	
CC 8A	Grading And Installation Details Crash Cushion Type G	02/24/05
CC 8B	Grading And Installation Details For "3R" Projects Crash Cushion Type G	02/24/05
CC 9A	Grading And Installation Details Crash Cushion Type H	02/24/05
CC 9B	Grading And Installation Details Crash Cushion Type H (Parabolic Flare)	02/24/05

Diversion Boxes (DB)

DB 1A	Standard Diversion Box/Cover Plate/Grating For 18" DIA. or 24" DIA. Pipe	01/01/05
DB 1B	Standard Diversion Box Hinged Lid Details For 18" DIA. or 24" DIA. Pipe	01/01/05
DB 1C	Standard Diversion Box Bicycle - Safe Grating Details For 18" DIA. or 24" DIA. Pipe	01/01/05
DB 1D	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	01/01/05
DB 1E	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	01/01/05
DB 1F	Standard Diversion Box Three Gate Box Sections For 18" DIA. or 24" DIA. Pipe	01/01/05
DB 2A	Standard Diversion Box w/Interchangeable Walls, Bottom Slab, Walls And Apron Details	01/01/05
DB 2B	Standard Diversion Box w/Interchangeable Walls, Quantities Schedule	01/01/05
DB 2C	Standard Diversion Box w/Interchangeable Walls, Hand Slide Gate Details	01/01/05
DB 2D	Standard Diversion Box Type "G" Hand Slide Gate Details	01/01/05
DB 2E	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type I Plan	01/01/05
DB 2F	Standard Diversion Box Hinged Lid (Solid Cover Plate) Type "A" Details Type II Plan	01/01/05
DB 2G	Standard Diversion Box Hinged Lid Solid Cover Type "B" Details	01/01/05
DB 2H	Standard Diversion Box Hinged Lid Solid Cover Type "B" And "C" Details	01/01/05
DB 3A	Standard Diversion Box With Manhole Cover Situation And Layout	01/01/05
DB 3B	Standard Diversion Box With Manhole Cover Up To 42" RCP And Up To 54" CMP	01/01/05
DB 3C	Standard Diversion Box With Manhole Cover 48" to 72" RCP And 60" to 84" CMP	01/01/05
DB 4	Standard Transition Concrete Lined Ditch To Pipe Or Diversion Box	01/01/05

Design Drawings (DD)

DD 1	Superelevation And Widening	01/01/05
DD 2	Surface Ditch, Benched Slope, And Cut Ditch Details	01/01/05
DD 3	Climbing Lanes	01/01/05
DD 4	Geometric Design for Freeways (Roadway)	02/24/05
DD 5	Entrance And Exit Ramps At Crossroads	01/01/05
DD 6	Entrance And Exit Ramp Geometrics	01/01/05
DD 7	Freeway Crossover	01/01/05
DD 8	Structural Geometric Design Standards For Clearances	01/01/05
DD 9	Structural Geometric Design Standards	01/01/05
DD 10	Railroad Clearances At Highway Overpass Structures	01/01/05

DD 11	Rural Multi Lane Highways Other Than Freeways	01/01/05
DD 12	Rural Two Lane Highways	01/01/05
DD 13	Frontage And Access Roads (Under 50 ADT)	01/01/05
DD 14	Typical Rural 2 Lane Road With Median Lane And Deceleration Lane For Intersecting Crossroads	01/01/05

Drainage (DG)

DG 1	Fill Height for Metal Pipe (Steel)	01/01/05
DG 2	Fill Height for Metal Pipe (Aluminum)	01/01/05
DG 3	Maximum Fill Height For HDPE And PVC Pipes	01/01/05
DG 4	Pipe Minimum Cover	01/01/05
DG 5	Plastic Pipe, Metal Pipe Or Pipe Arch Culvert Bedding	01/01/05
DG 6	Precast Concrete Pipe Culvert	01/01/05
DG 7	Gasketed Joints Or Coupling Bands For CMP	01/01/05
DG 8	Metal Culvert End Section	01/01/05
DG 9	Miscellaneous Pipe Details	01/01/05

Environmental Controls (EN)

EN 1	Temporary Erosion Control (Check Dams)	01/01/05
EN 2	Temporary Erosion Control (Silt Fence)	01/01/05
EN 3	Temporary Erosion Control (Slope Drain And Temporary Berm)	01/01/05
EN 4	Temporary Erosion Control (Drop Inlet Barriers)	01/01/05
EN 5	Temporary Erosion Control (Sediment Trap And Curb Inlet Barrier)	01/01/05

Fence And Gates (FG)

FG 1A	Right Of Way Fence And Gates (Wood Post)	01/01/05
FG 1B	Right Of Way Fence And Gates (Wood Post)	01/01/05
FG 2A	Right Of Way Fence And Gates (Metal Post)	01/01/05
FG 2B	Right Of Way Fence And Gates (Metal Post)	01/01/05
FG 3	Swing Gates Type I For Gates Less Than 17'	02/24/05
FG 4	Deer Gates	01/01/05
FG 5	Swing Gates Type II For Gates Wider Than 17'	01/01/05
FG 6	Chain Link Fence	01/01/05

Grates, Frames, And Trash Racks (GF)

GF 1	Manhole Frame And Grated Cover	01/01/05
GF 2	Manhole Frame And Solid Cover	01/01/05
GF 3	Rectangular Grate And Frame	01/01/05
GF 4	Directional Flow Grate And Frame	01/01/05
GF 5	Solid Cover And Frame	01/01/05
GF 6	Manhole Steps	01/01/05
GF 7	Standard Screw Gate And Frame	01/01/05
GF 8	2' x 2' Grate And Frame	01/01/05
GF 9	28" x 24" Directional Flow Grate And Frame	01/01/05
GF 10	Standard Trash Racks 90 ° X-ing Angle	01/01/05
GF 11	Standard Trash Racks	01/01/05

GF 12	Standard Trash Racks	01/01/05
GF 13	Open Curb Inlet Grate and Frame	01/01/05
GF 14	Solid Cover For Std Dwg DB 1 MS-18 Loading	01/01/05
GF 15	Standard Screw Gate And Frame	01/01/05

General Road Work (GW)

GW 1	Raised Median And Plowable End Section	01/01/05
GW 2	Concrete Curb And Gutter	01/01/05
GW 3	Concrete Curb And Gutter Details	01/01/05
GW 4	Concrete Driveways And Sidewalks	01/01/05
GW 5A	Pedestrian Access	01/01/05
GW 5B	Pedestrian Access	01/01/05
GW 5C	Pedestrian Access	01/01/05
GW 6	Right Of Way Marker	01/01/05
GW 7	Newspaper And Mailbox Stop Layout	01/01/05
GW 8	Newspaper And Mailbox Support Hardware	01/01/05
GW 9	Delineation Hardware	01/01/05
GW 10	Delineation Application	01/01/05
GW 11	Sidewalks And Shoulders On Urban Roadways	01/01/05

Paving (PV)

PV 1	Joints For Highways With Concrete Traffic Lanes And Shoulders	01/01/05
PV 2	Pavement/Approach Slab Details	01/01/05
PV 3	Concrete Pavement Details For Urban And Interstate	01/01/05
PV 4	Concrete Pavement Details For Urban And Interstate	01/01/05
PV 5	Urban Concrete Pavement Details	01/01/05
PV 6	Rumble Strips	01/01/05
PV 7	Rumble Strips - Typical Application	01/01/05
PV 8	Note Used	
PV 9	Dowel Bar Retrofit	01/01/05

Signals (SL)

SL 1A	Traffic Signal Mast Arm Pole And Luminaire Extension	01/01/05
SL 1B	Traffic Signal Mast Arm Pole And Luminaire Extension	01/01/05
SL 2	Traffic Signal Mast Arm Details 30' Thru 75'	01/01/05
SL 3	Underground Service Pedestal Details	01/01/05
SL 4	Traffic Signal Mast Arm Pole Foundation	01/01/05
SL 5	Traffic Signal Pole	01/01/05
SL 6	Pole Mounted Power Source Details	01/01/05
SL 7	Span Wire Signal Pole Details	01/01/05
SL 8	Signal Head Details	01/01/05
SL 9	Pedestrian Signal Assembly	01/01/05
SL 10	Traffic Signal Controller Base Details	01/01/05
SL 11	Traffic Signal Loop Detector Details	01/01/05
SL 12	Traffic Counting Loop Detector Details	01/01/05
SL 13	Not Used	

SL 14	Highway Luminaire Pole Ground Mount	01/01/05
SL 15	Luminaire Slip Base Details	01/01/05
SL 16	Highway Luminaire Pole Barrier Mount	01/01/05
SL 17	Highway Luminaire Pole Foundation Extension	01/01/05
SL 18	Single Transformer Substation Details	01/01/05

Signs (SN)

SN 1	Bridge Load Limits Signs	01/01/05
SN 2	School Speed Limit Assembly	01/01/05
SN 3	Overhead School Speed Limit Assembly	01/01/05
SN 4	Flashing Stop Sign	01/01/05
SN 5	Typical Installation For Milepost Signs	01/01/05
SN 6	Speed Reduction Sign Sequence	01/01/05
SN 7	Placement of Ground Mounted Signs	01/01/05
SN 8	Ground Mounted Timber Sign Post (P1)	01/01/05
SN 9	Ground Mounted Tubular Steel Sign Post (P2)	01/01/05
SN 10	Ground Mounted Square Steel Sign Post (P3)	01/01/05
SN 11	Slipbase Ground Mounted Tubular Steel Sign Post (P4)	01/01/05
SN 12A	Ground Mounted Sign Installation Details	01/01/05
SN 12B	Ground Mounted Sign Installation Details	01/01/05
SN 12C	Ground Mounted Sign Installation Details	01/01/05

Striping (ST)

ST 1	Object Markers "T" Intersection And Pavement Transition Guidance	01/01/05
ST 2	Freeway Crossover Markings	01/01/05
ST 3	Typical Pavement Markings	01/01/05
ST 4	Crosswalks, Parking And Intersection Approaches	01/01/05
ST 5	Painted Median And Auxiliary Lane Details	02/24/05
ST 6	Passing/Climbing Lanes Traffic Control	01/01/05
ST 7	Pavement Markings And Signs At Railroad Crossing	01/01/05
ST 8	Plowable Pavement Markers	01/01/05
ST 9	School Crossing And School Message	01/01/05

Structures And Walls (SW)

SW 1A	Welded End Guard Unit	01/01/05
SW 1B	Precast Concrete Cattle Guard	01/01/05
SW 2	Noise Wall Placement Area	01/01/05
SW 3A	Precast Concrete Noise Wall 1 Of 2	01/01/05
SW 3B	Precast Concrete Noise Wall 2 Of 2	01/01/05
SW 4A	Precast Concrete Retaining/Noise Wall 1 Of 2	01/01/05
SW 4B	Precast Concrete Retaining/Noise Wall 2 Of 2	01/01/05

Traffic Control (TC)

TC 1A	Construction Zone Channelization Devices	01/01/05
TC 1B	Construction Zone Signing	01/01/05
TC 2A	Traffic Control General	01/01/05

TC 2B	Traffic Control General	01/01/05
TC 3	Traffic Control Project Limit Signing	01/01/05
TC 4	Traffic Control Urban Intersections With Roadways Under 50 MPH	01/01/05
TC 5	Traffic Control Urban Intersections With Roadways Under 50 MPH	01/01/05
TC 6	Traffic Control Pedestrian Routing	01/01/05
TC 7	Traffic Control Road Closed, Detour	01/01/05
TC 8	Traffic Control Lane Closure	01/01/05
TC 9	Traffic Control Multilane Closure	01/01/05
TC 10	Traffic Control Expressway And Freeway Crossover/Turn Around	01/01/05
TC 11	Traffic Control Exit Ramp Gore	01/01/05
TC 12	Traffic Control Entrance Ramp Gore	01/01/05
TC 13	Traffic Control Shoulder-Haul Road	01/01/05
TC 14	Traffic Control Flagging Operation	01/01/05
TC 15	Traffic Control 2 Lane/2 Way Seal Coat With Cover Material	01/01/05
TC 16	Traffic Control Pavement Marking	01/01/05

This page left blank.

14-MAR-2005 DGN File: N:\Esd\Standard_Drawings\Imperial\2005Approved\XChange\Approved\sheet1b.dgn

☒ MARKED BOXES INDICATE DRAWINGS APPLICABLE TO THIS PROJECT

STANDARD DRAWING INDEX SHEET

This page left blank.

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

DWG. NO.	DESCRIPTION	DATE
	Fence and Gates (FG)	
FG 1 A	RIGHT OF WAY FENCE AND GATES (WOOD POST)	01-01-05
FG 1 B	RIGHT OF WAY FENCE AND GATES (WOOD POST)	01-01-05
FG 2 A	RIGHT OF WAY FENCE AND GATES (METAL POST)	01-01-05
FG 2 B	RIGHT OF WAY FENCE AND GATES (METAL POST)	01-01-05
FG 3	SWING GATES TYPE 1 FOR GATES LESS THAN 17'	02-24-05
FG 4	DEER GATES	01-01-05
FG 5	SWING GATES TYPE II FOR GATES WIDER THAN 17'	01-01-05
FG 6	CHAIN LINK FENCE	01-01-05
	Grates, Frames and Trash Racks (GF)	
GF 1	MANHOLE FRAME AND GRATED COVER	01-01-05
GF 2	MANHOLE FRAME AND SOLID COVER	01-01-05
GF 3	RECTANGULAR GRATE AND FRAME	01-01-05
GF 4	DIRECTIONAL FLOW GRATE AND FRAME	01-01-05
GF 5	SOLID COVER AND FRAME	01-01-05
GF 6	MANHOLE STEPS	01-01-05
GF 7	STANDARD SCREW GATE AND FRAME	01-01-05
GF 8	2' x 2' GRATE AND FRAME	01-01-05
GF 9	28" x 24" DIRECTIONAL FLOW GRATE AND FRAME	01-01-05
GF 10	STANDARD TRASH RACKS 90° X-ING ANGLE	01-01-05
GF 11	STANDARD TRASH RACKS	01-01-05
GF 12	STANDARD TRASH RACKS	01-01-05
GF 13	OPEN CURB INLET GRATE AND FRAME	01-01-05
GF 14	SOLID COVER FOR STD DWG DB 1 MS-18 LOADING	01-01-05
GF 15	STANDARD SCREW GATE AND FRAME	01-01-05
	General Road Work (GW)	
GW 1	RAISED MEDIAN AND PLOWABLE END SECTION	01-01-05
GW 2	CONCRETE CURB AND GUTTER	01-01-05
GW 3	CONCRETE CURB AND GUTTER DETAILS	01-01-05
GW 4	CONCRETE DRIVEWAYS AND SIDEWALKS	01-01-05
GW 5A	PEDESTRIAN ACCESS	01-01-05
GW 5B	PEDESTRIAN ACCESS	01-01-05
GW 5C	PEDESTRIAN ACCESS	01-01-05
GW 6	RIGHT OF WAY MARKER	01-01-05
GW 7	NEWSPAPER AND MAILBOX STOP LAYOUT	01-01-05
GW 8	NEWSPAPER AND MAILBOX SUPPORT HARDWARE	01-01-05
GW 9	DELINEATION HARDWARE	01-01-05
GW 10	DELINEATION APPLICATION	01-01-05
GW 11	SIDEWALKS AND SHOULDERS ON URBAN ROADWAYS	01-01-05

	DWG. NO.	DESCRIPTION	DATE
		Paving (PV)	
	PV 1	JOINTS FOR HIGHWAYS WITH CONCRETE TRAFFIC LANES AND SHOULDERS	01-01-05
	PV 2	PAVEMENT/APPROACH SLAB DETAILS	01-01-05
	PV 3	CONCRETE PAVEMENT DETAILS FOR URBAN AND INTERSTATE	01-01-05
	PV 4	CONCRETE PAVEMENT DETAILS FOR URBAN AND INTERSTATE	01-01-05
	PV 5	URBAN CONCRETE PAVEMENT DETAILS	01-01-05
	PV 6	RUMBLE STRIPS	01-01-05
	PV 7	RUMBLE STRIPS-TYPICAL APPLICATION	01-01-05
	PV 8	NOT USED	
	PV 9	DOWEL BAR RETROFIT	01-01-05
		Signals (SL)	
	SL 1A	TRAFFIC SIGNAL MAST ARM POLE AND LUMINAIRE EXTENSION	01-01-05
	SL 1B	TRAFFIC SIGNAL MAST ARM POLE AND LUMINAIRE EXTENSION	01-01-05
	SL 2	TRAFFIC SIGNAL MAST ARM DETAILS 30' THRU 75'	01-01-05
	SL 3	UNDERGROUND SERVICE PEDESTAL DETAILS	01-01-05
	SL 4	TRAFFIC SIGNAL MAST ARM POLE FOUNDATION	01-01-05
	SL 5	TRAFFIC SIGNAL POLE	01-01-05
	SL 6	POLE MOUNTED POWER SOURCE DETAILS	01-01-05
	SL 7	SPAN WIRE SIGNAL POLE DETAILS	01-01-05
	SL 8	SIGNAL HEAD DETAILS	01-01-05
	SL 9	PEDESTRIAN SIGNAL ASSEMBLY	01-01-05
	SL 10	TRAFFIC SIGNAL CONTROLLER BASE DETAILS	01-01-05
	SL 11	TRAFFIC SIGNAL LOOP DETECTOR DETAILS	01-01-05
	SL 12	TRAFFIC COUNTING LOOP DETECTOR DETAILS	01-01-05
	SL 13	NOT USED	
	SL 14	HIGHWAY LUMINAIRE POLE GROUND MOUNT	01-01-05
	SL 15	LUMINAIRE SLIP BASE DETAILS	01-01-05
	SL 16	HIGHWAY LUMINAIRE POLE BARRIER MOUNT	01-01-05
	SL 17	HIGHWAY LUMINAIRE POLE FOUNDATION EXTENSION	01-01-05
	SL 18	SINGLE TRANSFORMER SUBSTATION DETAILS	01-01-05
		Signs (SN)	
	SN 1	BRIDGE LOAD LIMITS SIGNS	01-01-05
	SN 2	SCHOOL SPEED LIMIT ASSEMBLY	01-01-05
	SN 3	OVERHEAD SCHOOL SPEED LIMIT ASSEMBLY	01-01-05
	SN 4	FLASHING STOP SIGN	01-01-05
	SN 5	TYPICAL INSTALLATION FOR MILEPOST SIGNS	01-01-05
	SN 6	SPEED REDUCTION SIGN SEQUENCE	01-01-05
	SN 7	PLACEMENT OF GROUND MOUNTED SIGNS	01-01-05
	SN 8	GROUND MOUNTED TIMBER SIGN POST (P1)	01-01-05
	SN 9	GROUND MOUNTED TUBULAR STEEL SIGN POST (P2)	01-01-05
	SN 10	GROUND MOUNTED SQUARE STEEL SIGN POST (P3)	01-01-05
	SN 11	SLIPBASE GROUND MOUNTED TUBULAR STEEL SIGN POST (P4)	01-01-05
	SN 12A	GROUND MOUNTED SIGN INSTALLATION DETAILS	01-01-05
	SN 12B	GROUND MOUNTED SIGN INSTALLATION DETAILS	01-01-05
	SN 12C	GROUND MOUNTED SIGN INSTALLATION DETAILS	01-01-05

[illegible][illegible]

4-MAR-2005 DGN File: N:\Esd\Standard Drawings\Imperial\2005Approved\XChange\Approved\sheet1.c.dgn

This page left blank.

Standards Committee Submittal Sheet

Name of preparer: Jason Davis

Title/Position of preparer: Region 3 Operations Engineer

Specification/Drawing/Item Title: Letter of instruction for use of non-standard 12.5 foot barrier

Specification/Drawing Number: _____

Enter appropriate priority level:

(See last page for explanation)

1

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page.
(<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

UDOT currently has miles of non-standard 12.5 foot or longer New Jersey barrier stockpiled in many locations. This barrier was kept when construction projects removed it or was purchased for a time when the maintenance station would have the time and money to place it in locations where it could improve the safety for the traveling public. During this delay in installing the barrier the standard for barrier was changed and made the current barrier with no place to go. It could still be used for repair of existing non-standard barrier but that was all. The intent of approving this letter of instruction is to allow this barrier to be used in areas that are in desperate need for something that is better than the current situation. An example would be an area that had guardrail that existed as more of a tripping hazard than a preventive measure for keeping vehicles within the right of way. The barrier proposed for use would improve the situation greatly making it safer and utilizing a resource that would otherwise be essentially useless to UDOT. The benefit/cost for this is immense because the cost is very minimal due to the fact we currently would only use that barrier which we currently have in stock and the benefit would be a roadway which would approach current safety standards without competing for other funds needed in more critical areas.

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications. NA

- C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site > Standards Committee Members at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.) NA they would not place or purchase this material.

ACEC Comments: (Use as much space as necessary.) NA they would not design for this material.

- D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Construction Engineers

NA they would not be responsible for the construction of any item using this material.

Contractors (Any additional contacts beyond "C" above.)

Suppliers

NA we would not be purchasing new material for this application.

Consultants (as required) (Any additional contacts beyond "C" above.)

Others (as appropriate)

Operations Engineers would surveyed at the Operations Engineers and were in favor of allowing the use of this material. John Leonard, Glenn Schulte drafted this letter and ran it through Traffic and Safety before sending the final draft out which I am presenting today. Without their cooperation this wouldn't be possible.

- E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.) NA
- F. Costs? (Estimates are acceptable.)
1. Additional costs to average bid item price. None
 2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming). Saves a lot of money that isn't available.
 3. Life cycle cost. NA
- G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.) (Estimates are acceptable.) My estimate HUGE!
- H. Safety Impacts?
- Improves the safety of the roadway that would not have a means of addressing the deficiencies otherwise.
- I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.
- Was a previous standard until the crash testing standard changed and UDOT adopted the new standard. UDOT currently has miles of this barrier stockpiled and in use on our roadways.

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

- Priority 1 Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.
- Priority 2 Upon posting, this impacts projects being advertised.
- Priority 3 Upon posting, the approved standard takes effect three weeks later for projects being advertised.

This page left blank.

LETTER OF INSTRUCTION

NUMBER: 05-1

Use of Non-Standard Length New Jersey Barrier

The use of non-standard length New Jersey shaped barrier (12½ foot sections) on non-NHS roadways is permitted when the following conditions are met:

1. When stockpiled barrier is available and is in good repair. Good repair is defined as no breaks in the barrier, minimal spalling of the barrier, no snag points on the barrier, no reinforcing steel is exposed, and connection loops are intact with no broken wires and no corrosion.
2. Non-standard length barrier is not to be purchased for placement, except as replacement for existing barrier on which maintenance is being done.
3. The posted speed is 45 MPH or less.
4. The barrier ends are protected as per BA 1 Series standard drawing requirements. This includes the placement of **TWO** standard length (20') barrier section at each end of the run, and the pinning of those sections as per Standard Drawing BA 1D.
5. The use of non-standard length New Jersey barrier is permitted on the NHS only when the barrier is placed 1.2 times outside the maximum AASHTO required Clear Zone.
(Example: maximum CZ = 20 feet, 1.2 x 20= 24 feet)

DRAFT

This page left blank.

Standards Committee Submittal Sheet

Name of preparer: Barry Axelrod for Richard Miller

Title/Position of preparer: Technical Writer

Specification/Drawing/Item Title: UDOT vs AASHTO Standards

Specification/Drawing Number: N/A

Enter appropriate priority level:

(See last page for explanation) N/A

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page.
(<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

This item is for discussion of UDOT versus AASHTO standards where UDOT standards exceed AASHTO standards. The following is provided for discussion.

Paved Shoulder	UDOT - shows all paved AASHTO - shows half and half
Bridge Width	UDOT - adds two feet to traveled way to each side of bridge
Vertical Clearance	UDOT - 16 feet 6 inches AASHTO - 16 feet
End Sections on Barrier	UDOT - 1.2 times clear zone gives length of need
Turn lane widths with raised barrier	UDOT - 11 foot turn lane AASHTO - down to 9 feet and up to 13 feet
Barrier offset	UDOT - 2 feet shy distance to barrier

Other discussion: Not allow gutter pan to be part of traveled way. UDOT policy not to allow gutters to be part of shoulder or traveled way. When constraints require it gutter to be part of the shoulder. A design waiver is required.

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

N/A

- C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site > Standards Committee Members at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

N/A

ACEC Comments: (Use as much space as necessary.)

N/A

- D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

N/A

- E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

N/A

- F. Costs? (Estimates are acceptable.)

N/A

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.)
(Estimates are acceptable.)

N/A

H. Safety Impacts?

N/A

I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

N/A

Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

Priority 1 Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised.

Priority 2 Upon posting, this impacts projects being advertised.

Priority 3 Upon posting, the approved standard takes effect four weeks later for projects being advertised.

This page left blank.

Standards Committee Submittal Sheet

Name of preparer: Tam Southwick

Title/Position of preparer: Signal and Lighting Engineer

Specification/Drawing/Item Title: Video Detection Camera Mount

Specification/Drawing Number: SL 13

Enter appropriate priority level:

(See last page for explanation) 3

NOTES:

1. All Submittal Sheets must be completed and sent to the Standards and Specifications Section by the Standards Committee suspense date as shown on their web page.
(<http://www.udot.utah.gov/index.php/m=c/tid=303>)
2. The Preparer of the Submittal Sheet or the Standards Committee member (or authorized substitute) responsible for the submittal must be present at the Standards Committee meeting and capable of discussing and answering all questions related to the submittal. The item will be postponed to a later meeting if one of these people is not present.
3. Notify the Standards and Specifications Section immediately of any changes that impact the presentation to include absence of sponsor or delay in presentation.

Complete the following: (Use additional pages as needed.)

- A. Why? Detail the reason for changing the Standard (Specification or Drawing), what has initiated a new Standard, or what has caused a new or changed item of interest.

This is a new standard that has been requested by the Region office. This new standard will clarify to the contractors on video detection camera mounting procedure and placement. Currently and in past projects, there have been inconsistent mounting practices on various projects.

- B. How is Measurement and Payment handled? Existing (from the measurement and payment document), modified, or new measurement and payment to be included with all Standard Specifications or Supplemental Specifications.

This new standard will not effect Measurement and Payment. The new standard will only clarify the position of mounting procedure. Currently some projects are already practicing this procedure.

C. Stakeholder Notification for AGC and ACEC:

By email provide the AGC and ACEC Standards Committee member a copy of all pertinent information relating to the specification or drawing. Detail all responses below. Indicate if no comments were received.

Note: There is a two-week response time set for this item.

Refer to the Standards Committee Web site > Standards Committee Members at <http://www.udot.utah.gov/index.php/m=c/tid=659> for the respective e-mail addresses.

AGC Comments: (Use as much space as necessary.)

AGC member was contacted by email for review of the proposed standard drawing. See attached email documentations.

No comments.

ACEC Comments: (Use as much space as necessary.)

ACEC member was contacted by email for review of the proposed standard drawing. See attached email documentations.

Tyler Yorgason - ACEC

I did not receive much in the way of comments from the ACEC reviewers regarding the New Video Detection Standard Drawing and have only a couple of minor editorial comments to offer:

1. The numbering of the notes is not consistent (some circled, some not).
 2. In Note 6, "feet" should probably be changed to "foot".
- Thanks again for the chance to review this drawing.

Response:

1. Not applicable.
2. Corrected

D. Stakeholders? From the list provided, document the stakeholders contacted, detailing: the company, name of contact, how contacted (by phone, email, hard copy, or in person), concerns, and comments of the change. Stakeholders:

Note: There is a two-week response time set for this item. Allow Stakeholders two weeks to process and respond to coordination requests. All areas should try to complete review and comment as soon as possible but within two weeks.

In-house (for example, preconstruction, materials, construction, safety, design, maintenance) (Include all applicable in-house areas even if not listed above.)

Construction Engineers

UDOT Construction Engineers were contacted by email for review of the proposed standard drawing. See attached email documentations.

No response or comments.

Contractors (Any additional contacts beyond "C" above.)

Signal Contractors were contacted by email for review of the proposed standard drawing. See attached email documentations.

Below are comments received:

Mark Longo – Cache Valley Electric

1. The size of the hole to be drilled in the mast arm is to be 1 1/2"

This should probably be changed to 1 1/8" or 1 3/8" as these are standard electrical hole saw sizes...a 1 1/2" hole could cause some confusion (ex. 1" conduit uses a 1 3/8" hole saw).

2. In 2 places the drawing calls for the Camera to have "METAL BAND STRAPS"

The mount for the cameras come with either metal band straps or cable type straps. Personally we feel the cable straps hold better, however our feeling is that the detail should be changed to allow either type strap to avoid possible delays in providing non-state furnished camera mounts.

3. Provide on the construction drawings the camera placement from the end of the arm, have the region signal supervisor review the drawings and place the cameras before the contractor begins work. Doing this puts the design aspect of the project back on the designers where it belongs.

Response:

1. Consulted with other individuals and felt 1 1/2" is fine.
2. Corrected, added metal cable straps
3. Corrected.

Jeff Salyer – Hidden Peak Electric

1. Is there a local supplier of the "Neoprene Grommet"?

Response:

1. Contractor okay with getting out of State

Suppliers

Suppliers were contacted by email for review of the proposed standard drawing. See attached email documentations.

Steve O'Conner – PEEK Video

I have reviewed the video detection camera mount detail drawing. My only comment is that Peek recommends their Video detection cameras be centered on the approach of concern. In other words:

- 1.. For a four lane approach (without a dedicated right turn lane) the recommended camera placement is centered in the middle of the 4 lanes.
 - 2.. If the 4 lane approach has a dedicated right turn lane, I would then center the camera on the the 3 lanes (left turn lane/s and through lanes).
 - 3.. This recommendation applies for all approach widths.
- The rest of the drawing looks great.

Response:

Based on Region experiences, the optimum placement is per proposed standard.

Consultants (as required) (Any additional contacts beyond "C" above.)

Consultant Designers were contacted by email for review of the proposed standard drawing. See attached email documentations.

Stephen Lewis – PEC Consulting

The drawing looks good. The only thing I would change is note 4 to make it something that the contractor must do. Something like: CONTACT REGION SIGNAL SUPERVISOR FOR FINAL CAMERA PLACEMENT, AIMING AND FOCUSING.

Response:

Corrected.

Andy Powell – URS

The "Video Detection Camera Placement" detail in the lower left-hand corner is in conflict with the "Design of Signalized Intersections: Guideline and Checklist". On page 6 of the guidelines it states that or dual left-turn lanes, the signal head regulating the left-turn movement should be placed between the two left-turn lanes. We noticed that you are showing two left-turn signal heads on the new detail sheet, Is there now going to be two signal heads for the dual left-turn indication? If so, the guidelines need to be updated, if not, the new drawing needs to be changed to show one left-turn head to be installed between the two left-turn lanes.

This will also resolve a conflict between the detail showing the two left-turn indications and note 7. Note 7 indicates the placement of the video detection one foot from the head, but the "Video Detection Camera Placement" detail shows the camera between the two left-turn heads (~5' from the heads)

Clarify the "Camera Mount Metal Band Strips" on the Video Camera Mount details. Maybe "Mast Arm Camera Mount Metal Band Strips"

Change note 1 to read "See Std Dwg SL 1A and SL 1B for signal pole and mast arm notes and details."

Add "See Detail A" to the end of note 3.

Change note 4 to read "Final camera placement, aiming and focusing to be approved....."

Change "feet" to "foot" in Note 6.

Response:

Corrected.

Others (as appropriate)
Udot Region Traffic Engineers:

Troy Torgensen – Region 4

The following are my comments regarding the new standard drawing for video detection.

1. Camera placement notes in the lower left corner:

A. Place camera toward end of mast arm to align with the 8-inch white lane line where possible.

B. Place camera such that it is aligned with the solid white line separating the two left turn lanes.

B alt. Center the camera between **the** two left turn lanes.

Note 4. Our region doesn't have a "Region Signal Supervisor." Maybe the note could read "Approved by Region."

Note 6. Change note with "feet" to "foot."

Note 7. Do we have more than one riser height? If not, then why not say "Install video camera riser..." Also, will this work. The ball is 12-inches in diameter so you will be 6-inches to the edge of the ball. How much wider is the louver? Will it work the way you have it shown?

Response:

1. Corrected

2. Note 4, corrected

3. Note 6, corrected

4. Note 7, should be fine and not in conflict with the back plate. Back plate is 5" exposed. Final placement will be approved by Region.

E. Minimum Sampling and Testing Guide (MS&T Guide)? (Consider all impacts and possible changes to the MS&T Guide during the preparation process. Coordinate with the Department Materials Engineer as appropriate. List all impacts and action taken.)

F. Costs? (Estimates are acceptable.)

1. Additional costs to average bid item price.

There are no additional cost to this new standard drawing proposal.

2. Operational (For example, maintenance, materials, equipment, labor, administrative, programming).

There are no additional operational cost to this new standard proposal.

3. Life cycle cost.

Not applicable.

G. Benefits? (Provide details that can be used to complete a Cost – Benefit Analysis.)
(Estimates are acceptable.)

H. Safety Impacts?
Not applicable.

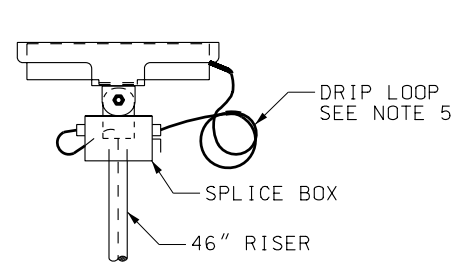
I. History? Address issues relating to the current usage of the item and past reviews, approvals, and/or disapprovals.

This request for this new standard drawing initiated by Region 2 for clarification on camera mounting practices during construction phase. There have been some misunderstandings by some contractors on mounting placement during construction. This proposed standard will provide a consistent mounting practice and will allow flexibility placement with street name mast arm signs.

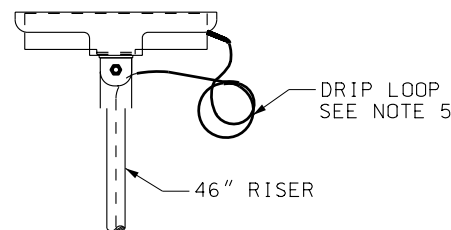
Priority Explanation

Enter the appropriate priority in the box on the first page of the document.

- | | |
|------------|---|
| Priority 1 | Upon posting, this impacts all projects in construction and design with a Change Order, Addenda, and immediate change to projects being advertised. |
| Priority 2 | Upon posting, this impacts projects being advertised. |
| Priority 3 | Upon posting, the approved standard takes effect three weeks later for projects being advertised. |

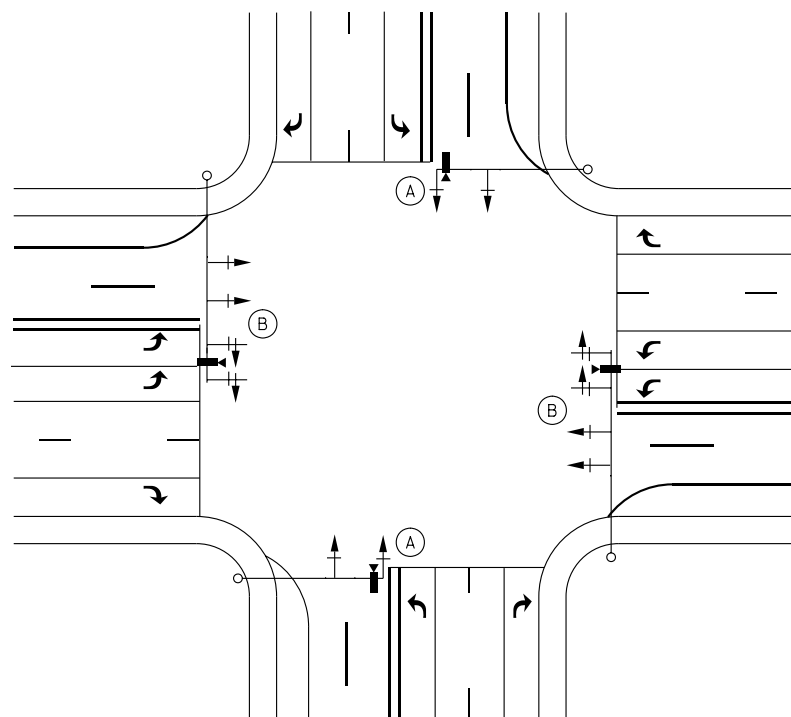


TYPE A



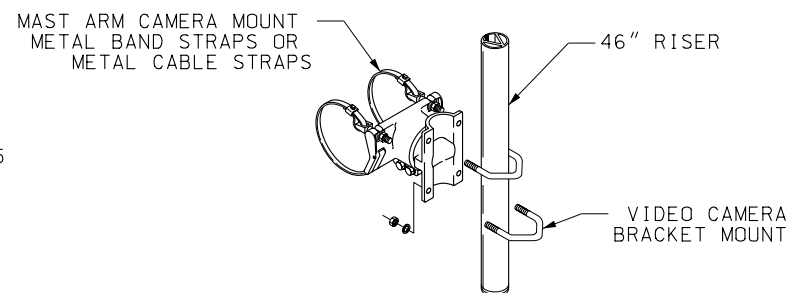
TYPE B

VIDEO DETECTION CAMERA

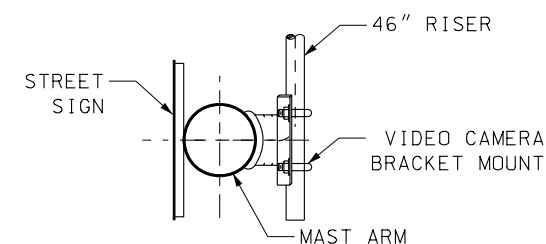


VIDEO DETECTION CAMERA PLACEMENT TYPICAL APPROACH DETECTION LAYOUT

- (A) SINGLE LEFT TURN LANE:
PLACE CAMERA TOWARD END OF MAST ARM TO ALIGN WITH THE 8" WHITE LANE LINE WHERE POSSIBLE.
SEE NOTE 4 AND NOTE 7.
- (B) DOUBLE LEFT TURN LANES:
CENTER THE CAMERA BETWEEN THE TWO LEFT TURN LANES.
SEE NOTE 4.

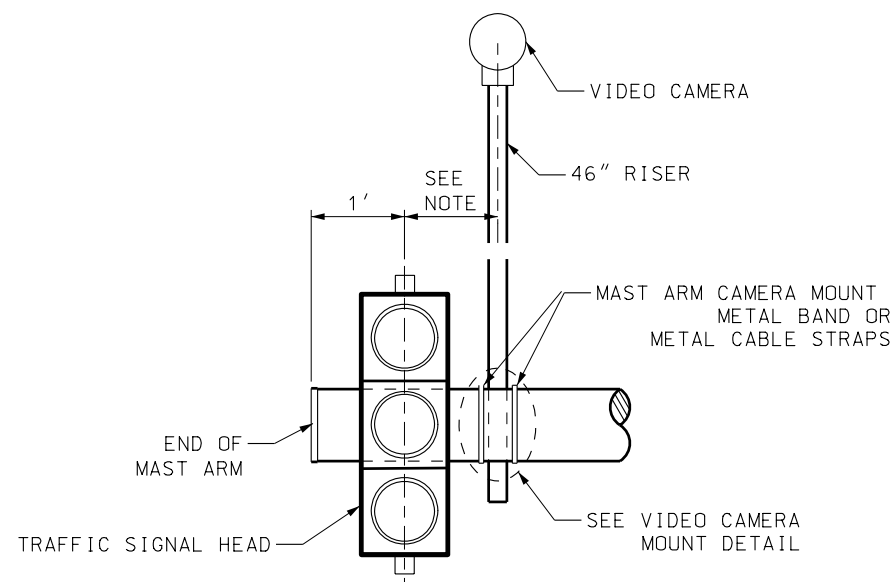


MOUNTING ASSEMBLY
SEE NOTE 2

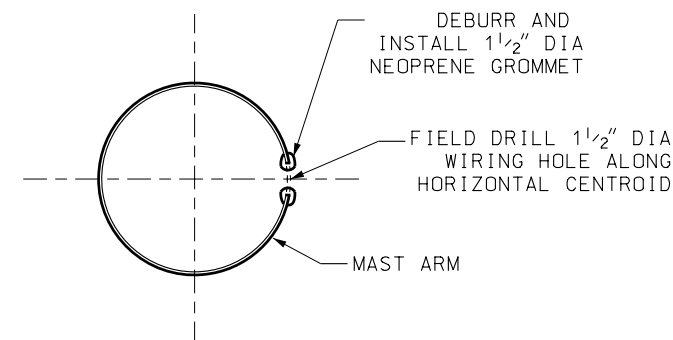


MOUNTING DIRECTION
SEE NOTE 2

VIDEO CAMERA MOUNT DETAIL



FRONT VIEW



DETAIL "A"
SEE STD DWG SL 2

NOTES:

- SEE STD DWG SL 1A AND SL 1B FOR SIGNAL POLE AND MAST ARM NOTES AND DETAILS.
- INSTALL VIDEO CAMERA AND CAMERA MOUNTING ASSEMBLY ON BACK SIDE OF MAST ARM.
- FIELD DRILL 1 1/2" DIAMETER WIRING HOLE ALONG THE HORIZONTAL CENTROID OF THE MAST ARM AT EACH CAMERA MOUNT LOCATION. DEBURR AND INSTALL NEOPRENE GROMMET FOR WIRE PROTECTION PRIOR TO INSTALLING CAMERA MOUNT ASSEMBLY. SEE DETAIL A.
- FINAL CAMERA PLACEMENT, AIMING AND FOCUSING TO BE APPROVED BY REGION SIGNAL ENGINEER.
- SECURE DRIP LOOP WITH A CABLE ZIP TIE.
- INSTALL TRAFFIC SIGNAL HEAD ONE FOOT FROM END OF MAST ARM TO CENTER OF SIGNAL HEAD. PLACE SIGNAL HEADS PER DESIGN PLANS.
- INSTALL VIDEO CAMERA 46" RISER MINIMUM ONE FOOT FROM CENTER OF TRAFFIC SIGNAL HEAD AND PER NOTE DETAIL (A) AND (B). SEE NOTE 4.

REVISIONS

1 04/28/05 T.S. NEW DRAWING.

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

APR.28.2005
DATE

APR.28.2005
DATE

RECOMMENDED FOR APPROVAL

CHAIRMAN STANDARDS COMMITTEE
APPROVED

DEPUTY DIRECTOR

VIDEO DETECTION
CAMERA MOUNT

STD DWG
SL 13

STANDARD DRAWING TITLE

This page left blank.

Action Item Update for April 28, 2005 Standards Committee Meeting

(As of April 11, 2005)

Item 1, Rumble Strips: According to John Leonard the BYU study is still pending. He recommends the target date be changed to June 2005.

Item 2, Painted Cattle Guard: According to John Leonard this is on hold pending further study and review. He recommends the target date be changed to June 2005.

Item 3, New Drawing of Four-Legged Intersection: According to John Leonard this item is not ready as a result of work on the Interstate signing project. He recommends the target date be changed to June 2005.

Item 4, Deer Ramps: Being covered on the agenda with follow up from previous meeting. Item up for approval.

Item 5, Traffic Barriers: Tim Biel indicated the item is still being worked on. Agenda item 7, Use of Non-Standard 12.5 Foot Barrier, for the April meeting does not cover the full extent of Tim's item. Tim recommends the target date be changed to June 2005.

Item 6 QIT to review entire New Products procedure: Item assigned to Research Division. Information provided by Michelle Page. A QIT has been formed to look at the item. Meeting over the next several months have been scheduled. Target date June 2005.

Item 7, Section 00555, Prosecution and Progress, Liquidated Damages Table.
Complete additional review and statistical analysis of Liquidated Damages table.
Pending for April agenda.

Item 8, Standards Committee Policy 08A-5: Item on agenda for approval.

Item 9, Supplemental Specification 02827, Deer Ramp and Standard Drawings FG 4A and FG 4B, Deer Ramp: Item on agenda for approval.

Item 10, AT 4, Typical Ramp Meter Signal Head Mounting: Item on agenda for approval.

Item 11, SL 12, Traffic Counting Loop Detector Details: Item on agenda for approval.

Item 12, Open Range Cattle Issues: Target date June 2005.